aec
Atlanta Environmental Consultants
3440 Blue Springs Rd. Suite 503
Kennesaw, Georgia 30144
Phone: 678-738-7004
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June 13, 2012

Mr. David Brownlee
Acting Program Manager
Voluntary Remediation Program
Land Protection Branch
Georgia Environmental Protection Division
2 Martin Luther King, Jr. Drive, SE
Atlanta, GA 30334-9000

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Re: Semi-Annual Status Report – June 2012
Voluntary Remediation Program
Roswell Cleaners, HSI Site No. 10883
Roswell, Fulton County, Georgia
Tax Parcel ID No. 12-1902-0412-061-6

AEC Report REB-2407.02

Dear Mr. Brownlee:

Atlanta Environmental Consultants, on behalf of R. Richard E. Bowen, Roswell Cleaners property, 1013 Alpharetta Street, Roswell, Fulton County, Georgia, is pleased to present our second annual Semi-Annual Status Report for the above referenced facility. Progress in the Voluntary Remediation Program (VRP) is summarized in the Updated Conceptual Site Model (CSM), enclosed. Responses to Georgia Environmental Protection Division (GAEPD) correspondence are summarized below in a Comment and Response format.

GEORGIA EPD CORRESPONDENCE

Response to Letter Dated April 21, 2011

Comment 1. Several different proposed corrective action methods for soil are discussed. An asphalt cap is mentioned; however, the CSM also states that "soils in areas where concentrations exceed notification concentrations (NC) will be resampled" and "remediation of soils will be considered." Soil in the source area must be horizontally and vertically delineated.

Soils in the source area will be horizontally and vertically delineated to the designated delineation standard according to the milestone schedule. An asphalt cap is the proposed primary remedy, along with any necessary institutional controls. Active remediation of soils will be considered if it is determined that the proposed remedy is not protective of human health and the environment. Horizontal delineation of soils where access is available has been completed. Efforts to penetrate the interior concrete floor will continue, although the soil boring and monitoring well, MW-5 [Bowen] directly downgradient of the dry cleaning machine indicated no detectable soil or groundwater concentrations.

Comment 2. If controls are used to limit exposure, then a Uniform Environmental Covenant will be needed to maintain the existing cap and to document that construction and utility workers must be notified that protective measures are necessary during any work where soil contamination will be encountered.

In the event the final remedy of the facility involves engineering controls consisting of an asphalt cap, an approved environmental covenant, specifying that the existing cap will be maintained and documenting that construction and utility workers must be notified that protective measures are necessary during any work where soil contamination will be encountered, conforming to O.C.G.A. 44-16-1 et seq., will be implemented for the impacted property.

Groundwater

Comment 3. EPD cannot verify the estimate that groundwater will not reach Hog Wallow Creek for 59 to 254 years because those calculations have not been provided and no groundwater modeling or slug test data was presented. An appropriate point of demonstration well and groundwater fate and transport model must be used for verification.

Slug test data and calculations supporting the estimated time of travel to Hog Wallow Creek have been provided to the Georgia EPD. An appropriate point of demonstration well and groundwater fate and transport model will be used for verification in the event delineation is not complete prior to the point where groundwater is projected to flow into Hog Wallow Creek prior to the final determination of the disposition of this site. See CSM report attachments for detailed presentation of slug test data and evaluation, enclosed. Groundwater fate and transport modeling has been conducted, and will be mre fully detailed in a subsequent report.

Semi-Annual Status Report – April 2012

Complete Horizontal Delineation Where Access is Available.

Completion of horizontal delineation where access is available has been completed, as detailed in the enclosed CSM, except under the building's concrete slab. Efforts to penetrate the concrete floor were unsuccessful, but will be continued.

Updated Conceptual Site Model

The Georgia EPD requested verification of our travel time range estimate of compounds identified onsite from the site to Hog Wallow Creek. Slug test data and calculations supporting the estimated time of travel from the site to Hog Wallow Creek have been prepared and have been submitted to the Georgia EPD to be incorporated in the Conceptual Site Model (CSM) for this site. An appropriate point of demonstration well and groundwater fate and transport model will be used for verification in the event horizontal delineation has not been completed. A revised Site Location Map showing the estimated route of travel has been provided to the Georgia EPD. The CSM is hereby revised and updated with the addition of these calculations and map, and the proposed point of demonstration well and groundwater fate and transport model.

Additional revisions and updates will be made to the CSM as the implementation of the VRP progresses through scopes of work and activities listed in the Milestone Schedule.

Second Semi-Annual Progress Report

Response to Letter Daed March 5, 2012

1) **The following items are missing from the subject semi-annual progress report:**

   a. **EPD requires that in future submissions, the CSM is updated in its entirety as opposed to adding addendums. This way it is clear how the new data has been integrated into the CSM; and**

   b. **A updated milestone schedule, describing implementation of the VIRP during the proceeding semi-annual period. A Gantt chart format is preferred for presentation of the updated milestone schedule.**

Pursuant to Item #5 of the current VRP Application Form and Checklist, the above-referenced items must be included in each semi-annual status report submitted to the director by the VRP participant. Please ensure that said items are included in all semi-annual progress reports submitted in the future.

Atlanta Environmental Consultants has updated the CSM and incorporated all comments and responses into the CSM. An updated milestone schedule is provided. Your request has been noted.

2) **Pursuant to Item #6 of the current VRP Form Application Form and Checklist, a signed and sealed Georgia Professional Engineer (PE)/Professional Geologist (PG) Certification statement, along with the supporting documentation referenced in the statement, must be provided with each future submittal as follows:**

I certify under penalty of law that this report and all attachments were prepared by me or under my direct supervision in accordance with the Voluntary Remediation Program Act (O.C.G.A. Section 12-8-101, et. seq.). I am a professional engineer/professional geologist who is registered with the Georgia State Board of Registration for Professional Engineers and Land Surveyors/Georgia State Board of Registration for Professional Geologists and I have the necessary experience and am in charge of the investigation and remediation of this release of regulated substances.

Furthermore, to document my direct oversight of the Voluntary and Investigation Remediation Plan development, implementation of corrective action, and long term monitoring, I have attached a monthly summary of hours invoiced and description of services provided by me to the Voluntary Remediation Program participant since the previous submittal to the Georgia Environmental Protection Division.

The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Atlanta Environmental Consultants has provided the requested Certification Statement, which is included on a separate Certification page in the enclosed CSM.

Response to Comment 1 (Soil Delineation):

3) **Please note that the next progress report, which must demonstrate horizontal delineation of soil and groundwater contamination on the qualifying property, must include a statement regarding the delineation criteria chosen to be applied to soil and groundwater contamination on the qualifying property and a table summarizing the actual delineation standards proposed. Conclusions regarding the adequacy of delineation of contamination at the qualifying property cannot be made without said information.**

Atlanta Environmental Consultants has provided a statement regarding the delineation criteria chosen and tables in the Site Delineation Concentration Data section presenting and summarizing the delineation standards proposed, above.

Responses to Comment 3 (Groundwater):

4) **EPD has reviewed the calculation of estimated migration time from the Roswell Cleaners property to Hog Wallow Creek. These calculations will need to be revised to reflect revisions in slug test calculations and resulting groundwater velocity values. Additional, fate and transport modeling of VOC-impacted groundwater must be completed to demonstrate no human or environmental receptors will be impacted by this release.**

5) Additional information must be submitted regarding slug tests, including:

- **a. Time vs. head plots with straight-line match for slug tests performed in monitoring wells MW-1, MW-2 and MW-3;**
- **b. Clarification on the calculation of Rw for all wells in which slug tests were conducted, including boring logs. According to the Parameter Values table, slug test input values Rc and Rw are both 0.083 feet. The Rc value cannot be equal to the Rw value;**
- **c. Clarification of the determination of slug test parameters Re (effective radius) and D (effective aquifer thickness); and**
- **d. EPD noted that the slug test evaluation was collected on September 28, 2008. Values used for calculating gradient (dh/dl) must correlate with the date of the slug test evaluation. These data must be submitted.**

Information requested follows:

Time vs. head plots are provided as an attachment in the enclosed CSM.

The calculation of Rw is as follows: The wells are 2-inch diameter wells in 6.5-inch diameter boreholes, or 0.54 ft diameter. The sand pack in the borehole is uniform clean sand that has significantly higher permeability than the formation. Thus, Rw = 0.5 * diameter = 0.27 ft. Conversion of one inch to feet yields. The value of Rc has been recalculated to reflect borehole diameter, which is 6.5 inches, or 0.54 ft. The water table is in the screened section of the well. The borehole contains a sand pack outside of the well screen. $Rc = [0.083^2 + 0.40(0.54^2 + 0.083^2)]^{1/2} = 0.35$. Detailed calculations are presented as an attachment in he enclosed CSM.

Effective aquifer thickness was estimated based on available information. Monitoring wells currently onsite penetrate the saturated zone in the general range of 10 feet, plus or minus, depending on the specific well and the water table elevation. As no bedrock was encountered during borings for any of the monitoring wells, depth to bedrock is unknown. Our estimate is that bedrock is perhaps another 10 feet, plus or minus, below the depth of the existing wells, or a total of approximately 20 feet of unconsolidated saturated zone. We are now using 20 feet as our estimated, or effective, aquifer thickness. This estimate may be revised, as appropriate, as additional information becomes available as our investigation progresses.

A Figure presenting groundwater elevations and gradient on the date of the slug tests has been prepared and is presented in the enclosed CSM report as Figure 7B.

Please do not hesitate to contact us should you have any questions.

Thank you.

Sincerely,

ATLANTA ENVIRONMENTAL CONSULTANTS

Peter T. Kallay, P.E.
Manager, Environmental Services

06/13/12

pc: Jessica Jewell McCarron
Richard E. Bowen
Richard A. Wingate, Esq., Hallman & Wingate, LLC

CONCEPTUAL SITE MODEL

ROSWELL CLEANERS
1013 Alpharetta Street
Roswell, Fulton County, Georgia 30075
HSI #10883

Prepared For:

Mr. Richard E. Bowen
811 Serramonte Drive
Marietta, Georgia 30068

MAY 2012

AEC Project Number REB-2407

Peter T. Kallay, P.E. 06/13/12

Atlanta Environmental Consultants
3440 Blue Springs Road, Suite 503
Kennesaw, Georgia 30144

Phone (678) 738-7004
Fax (678) 569-2419

Registered Professional Engineer Certification

I certify under penalty of law that this report and all attachments were prepared by me or under my direct supervision in accordance with the Voluntary Remediation Program Act (O.C.G.A. Section 12-8-101, et. seq.). I am a professional engineer/professional who is registered with the Georgia State Board of Registration for Professional Engineers and Land Surveyors and I have the necessary experience and am in charge of the investigation and remediation of this release of regulated substances.

Furthermore, to document my direct oversight of the Voluntary and Investigation Remediation Plan development, implementation of corrective action, and long term monitoring, I have attached a monthly summary of hours invoiced and description of services provided by me to the Voluntary Remediation Program participant since the previous submittal to the Georgia Environmental Protection Division.

The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name Peter T. Kallay, P.E.

Signature _____

Date 06/13/12

_____
Georgia Stamp or Seal

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Site Description

The Site is a commercial property in the City of Roswell, Fulton County Tax Parcel # 12-1902-0412-061-6. The Site contains one single story commercial concrete block slab-on-grade building that was constructed in 1966, based on available records of the Fulton County Tax Assessor. The building currently houses Roswell Cleaners. Part of the building that had formerly housed a coin laundry is vacant at this time. Available records indicate the building has been used primarily as a dry cleaners since construction. The dry cleaners has operated under the names Roswell Sunshine Center, Sunshine Center, Sunshine Cleaners (or Roswell Sunshine Cleaners), Roswell Cleaners & Coin Laundry, and Roswell Cleaners. Figure 1 shows the Site location. Figure 2 shows the Site plan.

Site Surface and Subsurface Setting

The Site is situated on fill material (soil) up to 15 feet deep overlying the original soil horizon. All areas on the Site with measurable soil concentrations of volatile organic compounds (VOC) are capped with concrete or asphalt pavement in good condition. A layer of topsoil from the original soil horizon appears to be present at the depth of the original native soil surface.
The resources survey conducted in conjunction with Hazardous Site Response Act (HSRA) Notification confirms that no water wells or other groundwater use within one mile of the Site is known or suspected.

Environmental Assessment and Graphical 3-Dimensional Conceptual Site Model

Environmental assessment activities conducted at the Site have detected the presence of tetrachloroethene (PCE) and degradation products in soils and groundwater. Samples were collected on August 25-27, 2008, April 16, 2012 and April 18, 2012. All samples were analyzed by Advanced Chemistry Labs, Inc., Atlanta, Georgia.

Soils

Soil samples collected on August 24-25, 2008 from soil boring MW-4 at 15 feet below ground surface (bgs) contained the following constituents: PCE (84.2 milligrams per kilogram (mg/kg)); trichloroethene (TCE) (5.29 mg/kg); cis-dichloroethene (cis-DCE) (2.37 mg/kg); trans-dichloroethene (trans-DCE) (0.841 mg/kg). See Figure 3.

On April 16, 2012, soil samples from soil boring/monitoring well MW-5 Bowen were collected. This boring/monitoring well is referred to herein as MW-5 Bowen to distinguish this well from a well previously identified as MW-5 that is located on the Lindsay Property, which is now referred to as MW-5 Lindsay. In addition, on April 16, 2012 a composite sample of investigative derived waste was collected. Both samples were analyzed by EPA Method 8260; no measurable concentrations of any compounds were detected in either sample.

Groundwater

On April 18, 2012 groundwater samples were collected at the site. The following constituents were detected in MW-4: PCE (0.066 milligrams per liter (mg/L)); TCE (0.037 mg/L); cis-DCE (0.056 mg/L); trans-DCE (0.0031 mg/L). Vinyl chloride (0.0036 mg/L) was detected in MW-2. See Fig. 4. No detectable concentrations of any compounds were detected in MW-5 Bowen.

A potentiometric map and groundwater flow direction is presented as Figure 7. Figures 5 through 10 depict the three-dimensional representation of soil and groundwater contamination, potential source areas, groundwater flow direction, and potential receptors.

Vapor Intrusion Pathway

On April 16-18 Atlanta Environmental Consultants attempted to penetrate the floor inside the building to collect soil gas samples through vapor probes. Efforts to bore through the floor were unsuccessful due to the apparent thickness of the concrete slab.

Additional efforts to collect sub-floor gas samples will be performed using heavier concrete-boring equipment. All samples will be collected and analyzed according to EPD guidelines and EPA Method TO-15.

Photo-ionization detector surveys have indicated vapor concentrations in the building's interior and nearby soils not exceeding 1.0 parts per million (ppm), except very briefly following dry cleaner operations. MW-5, installed hydraulically downgradient of the dry cleaning machine, indicated no detectable VOCs in either soils or groundwater.

Potential Exposure during Potential Utility or other Subsurface Construction

No utility or other subsurface construction work is planned or proposed. AEC intends to resample soils in the area in which soils previously exceeded Notification Concentrations (NC). In the event soils to the maximum depth of utilities, foundations and/or other structures onsite meet applicable standards, no further action is proposed. In the event soils exceed standards (including site-specific utility and construction worker cleanup standards) and significant work onsite occurs or is proposed, remediation of soils will be considered and may be implemented. Nevertheless, in accordance with Section 391-3-19-.07(10) of the Rules for Hazardous Site Response, site-specific utility and construction worker cleanup standards will be calculated and compared to soil and groundwater concentrations. Workers onsite shall be notified of the presence of soil VOC concentrations prior to beginning work and shall be aware of and trained in appropriate implementation of, and use of, engineering controls, work practices, personal protective equipment (PPE) or other appropriate means of precluding or minimizing contact. Any construction area shall be barricaded, surrounded with construction fencing and/or employ other appropriate means to preclude access by unauthorized persons.

Surface Water

U.S. Geological Survey (USGS) 7.5-minute series topographic map, Roswell, GA Quadrangle (Figure 1) indicates Hog Wallow Creek at a distance of approximately 1,800 feet in the direction of groundwater flow (east-southeast) from the Site.

Existing data does not suggest that any concentrations of solvents exceeding applicable standards will reach Hog Wallow Creek or any other surface water body. See Figure 1. Groundwater migration rate was calculated at 7.80 feet/year to 19.89 feet/year(average 11.50 feet/year). At this rate groundwater from the Site would reach Hog Wallow Creek from 90 to 231 years, or an average of 157 years. This is the computed rate of groundwater flow and does not take into consideration any retardation or attenuation mechanisms .

Additional Investigations

Horizontal delineation has been completed where access is available.

MW-5 [Bowen] was installed hydraulically downgradient of the dry cleaning machine. MW-5 contained no detectable VOCs in soils or groundwater.

MW-3, located downgradient of the building, exhibited PCE (0.016 mg/L). Using groundwater modeling, PCE is delineated to below Type I Residential RRSs downgradient of MW-3 before reaching the property line.

MW-1, MW-2, and MW-5 delineate concentrations of PCE up-gradient and cross-gradient of the suspected source.

Using groundwater modeling, TCE is delineated to below Type I Residential RRSs in MW-4 (0.037 mg/L) and MW-3 (0.0084 mg/L) before reaching the property line.

Cis-DCE is below Type I Residential Standards in all samples.

VC was not detected in either MW-4 or MW-3.

Low concentrations of PCE, TCE, DCE and VC detected in MW-2 are not a result of activities on the Roswell Cleaners site. No onsite sources or potential sources have ever existed on the Site upgradient or in the area of MW-2.

Many potential sources of PCE, TCE and associated solvents have formerly existed offsite, hydraulically up-gradient of MW-2, including the former Genuine Auto Parts, NAPA Auto Parts, NAPA Auto Parts machine shop, Auto Body Plus (the location at 1007 Alpharetta Street), Tallant Pete Motors, Big E Motors, Alfa Driving School, Wright, Joe E (believed to have been an automotive business), Capri XL Houseboats, Benson Chevrolet, Marietta Poultry Equipment, Simmons Engineering Co., Wright's Garage Ltd. and possibly others. A number of these sources pre-date Roswell Cleaners.

Completion of horizontal delineation where access is not available is proposed in 24 months. These delineation activities shall include then-current soil and groundwater concentrations and identification of points, if any, at which horizontal delineation does not appear to be complete where access is available. Delineation will be completed to the Voluntary Remediation Program Type I Residential Risk Reduction Standards.

Groundwater Fate and Transport Modeling

BioScreen was utilized to model contaminant concentrations along the route of flow and contaminant transport from MW-4 toward MW-3. The BioScreen model indicated that PCE, the compound present at the highest concentration in the apparent source well (MW-4), would decrease to below 0.005 mg/l before reaching the property line. The BioScreen model also indicated that TCE would decrease to below 0.005 mg/l before reaching the property line. Therefore, delineation where access is available has been completed.

Suspected Sources of Regulated Substances

The Subject Property has been the location of a successive series of businesses operating dry cleaners over a period exceeding 40 years. Dry cleaners most commonly use PCE as a dry cleaning solvent. Regulation of purchase, storage, use, handling and accumulation of spent PCE and disposal of PCE was non-existent to very limited until 1981. PCE may have entered the environment during delivery and handling of containers (e.g., drums and buckets), pouring PCE into dry cleaning machines, draining spent PCE, changes of and temporary storage of spent filters, sweeping and mopping of floors. PCE may have entered the environment from vaporization, drips and spills, PCE-containing filters, rags, mops etc that may have been disposed, spent PCE handling, etc. following common practices and rulesAll investigation findings to date indicate that any potential release was limited to the area of MW-4 at the rear of the building.

Additional Assessment and Risk Reduction Standards

The suspected source appears to be in the area of MW-4. Soil concentrations of PCE and its biodegradation products are non-detectable or very low in all other soil samples on the Site. Groundwater will be delineated to appropriate RRSs. In the event site-specific risk reduction standards are proposed, a point of demonstration well will be proposed, as appropriate, along with an appropriate monitoring schedule.

Site Delineation Concentration Criteria

Site delineation will be completed to Voluntary Remediation Program Type I Residential Risk Reduction Standards. Risk Reduction Standards (RRS) proposed for groundwater are as follows, from Table 1 of Appendix III unless otherwise noted:

Constituent	Delineation of Groundwater Stds (mg/l)
Tetrachloroethene (PCE)	0.005
Trichloroethene (TCE)	0.005
Cis-Dichloroethene (cis-DCE)	0.07*
Trans-DCE	0.1
Vinyl Chloride	0.002

* Federal Maximum Contaminant Level (MCL).

Risk Reduction Standards proposed for soils are as follows, from Appendix I:

Constituent	Delineation of Soil Standards (mg/kg)
PCE	0.18
TCE	0.13
Cis-DCE	0.53
Trans-DCE	0.53

In the event engineering controls are proposed or utilized, a long-term maintenance and monitoring plan will be included as part of the proposed engineering controls remedy.

CONCLUSIONS AND RECOMMENDATIONS

Additional Assessment at the Roswell Cleaners property, 1013 Alpharetta Street, Roswell, Fulton County, Georgia 30075, HSI #10883, supports the following conclusions and recommendations:

- MW-5, located downgradient of the suspected source contained no detectable concentrations of VOCs by EPA Method 8260B in either soils or groundwater indicating that delineation has been achieved at this point.

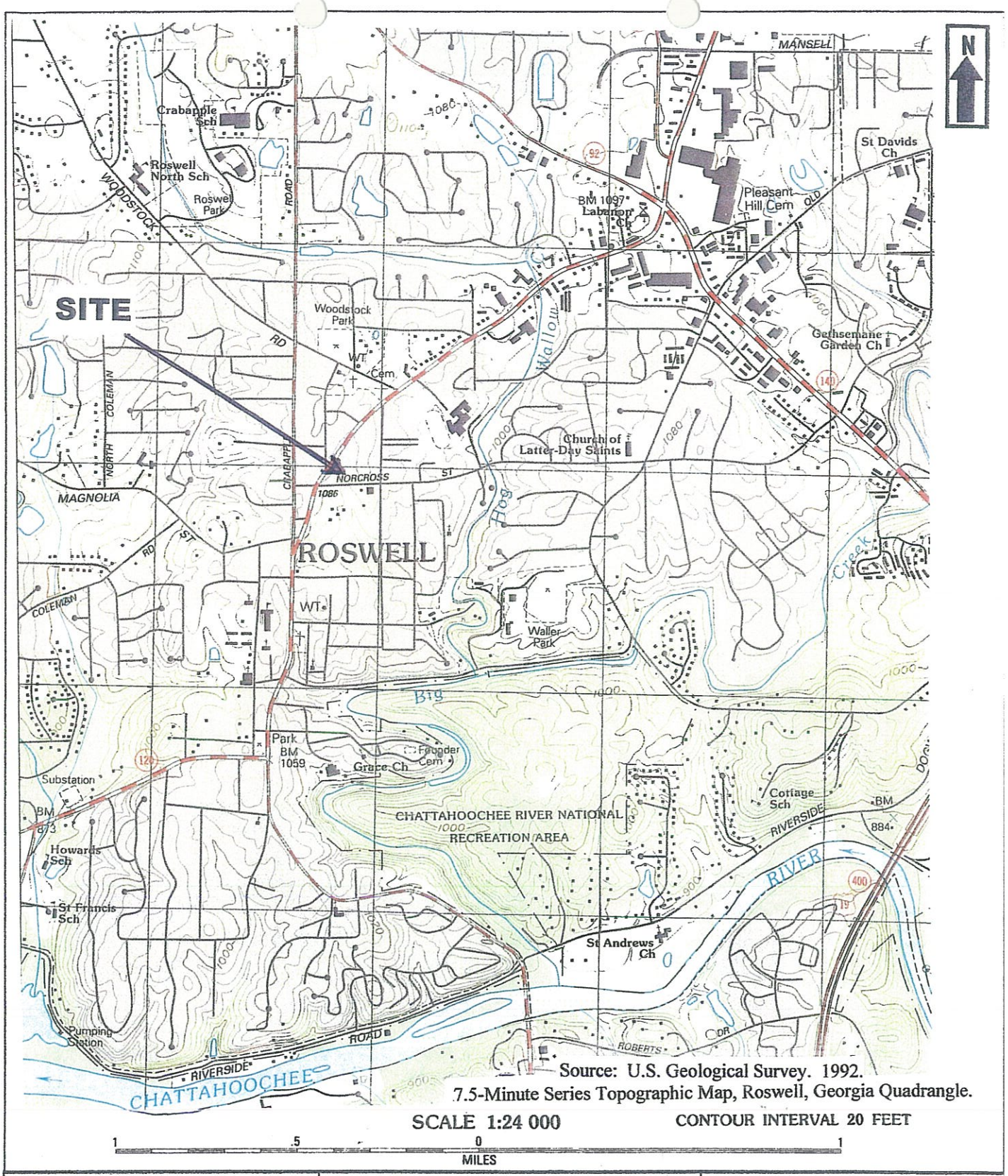
- PCE and PCE degradation compound concentrations have generally decreased in concentrations since investigation activities commenced. PCE and products reasonably believed to have originated from site activities (MW-4 and MW-3) have been delineated. The only potential onsite source appears to be in the vicinity of MW-4.

- Groundwater flow direction has been determined to be toward the east-southeast. Groundwater flow direction has been consistently east-southeast during every gauging event conducted at the Site.

- Low concentrations of PCE, TCE and degradation products of PCE and TCE identified in MW-2 at the property's southwest corner originate from hydraulically upgradient sources toward the west-northwest. No onsite sources at, near or hydraulically up-gradient of MW-2 exist or are known to have ever existed onsite. Other potential off-site sources include a number of former businesses formerly located hydraulically up-gradient of the property containing Roswell Cleaners that typically use solvents, including PCE and/or TCE. The much more extensively degraded mix of chlorinated hydrocarbons at MW-2 suggests an more weathered and likely older source than the onsite source around MW-4.

- The site investigation will proceed in accordance with the Milestone Schedule.

FIGURES



Source: U.S. Geological Survey. 1992.
7.5-Minute Series Topographic Map, Roswell, Georgia Quadrangle.

SCALE 1:24 000 CONTOUR INTERVAL 20 FEET

1 .5 0 1
MILES

Figure 1: Site Location Map

Roswell Cleaners and Coin Laundry
1013 Alpharetta Street
Roswell, Georgia 30075

aec
Atlanta Environmental Consultants

Drawn By: Terri Drabek

Checked By: Peter Kallay, P.E.

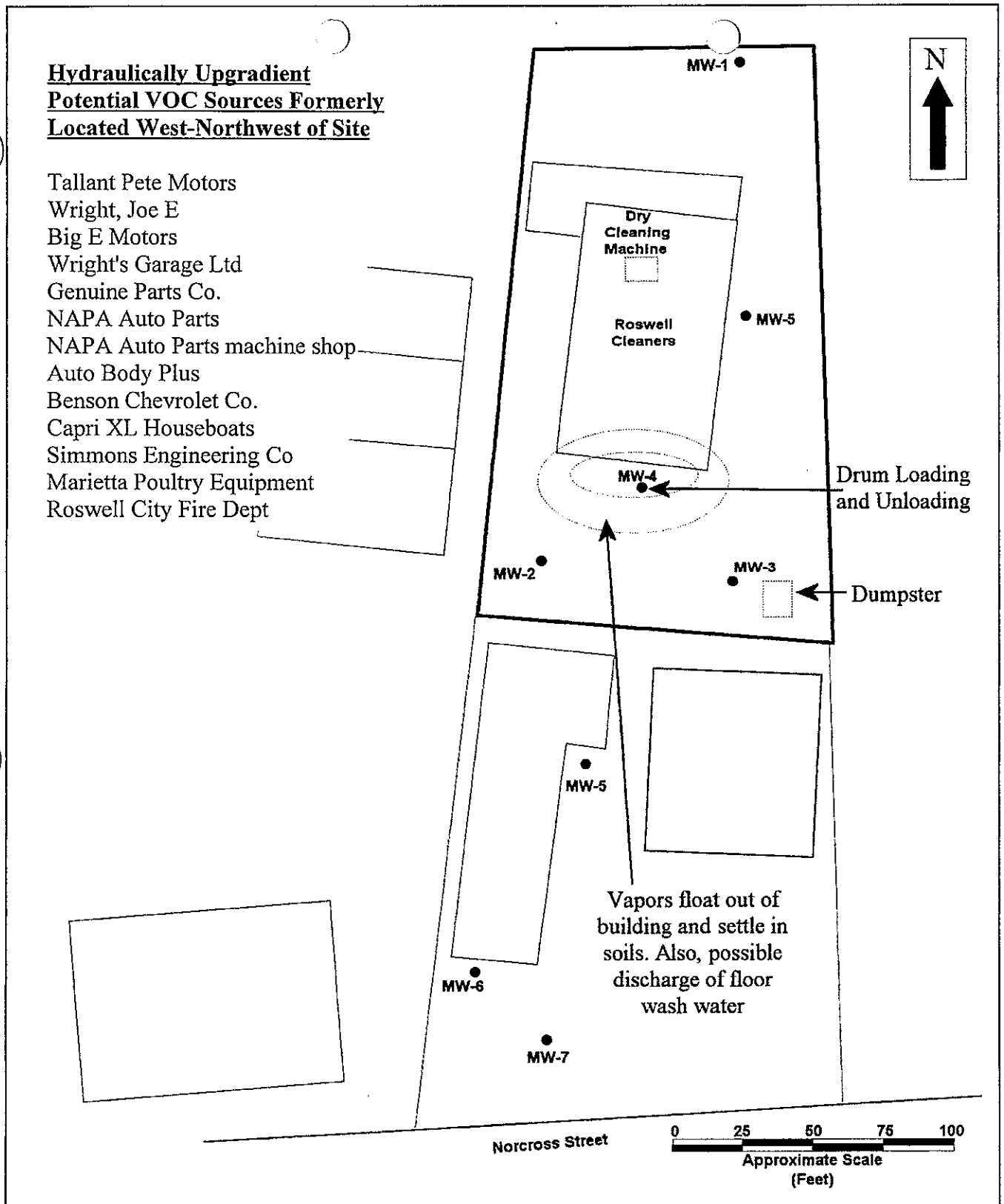


Figure 2: Site Plan Showing Possible Sources

Roswell Cleaners and Coin Laundry
1013 Alpharetta Street
Roswell, Fulton County, Georgia

aec
Atlanta Environmental Consultants

Drawn By: Terri Drabek

Checked By: Peter Kallay, P.E.

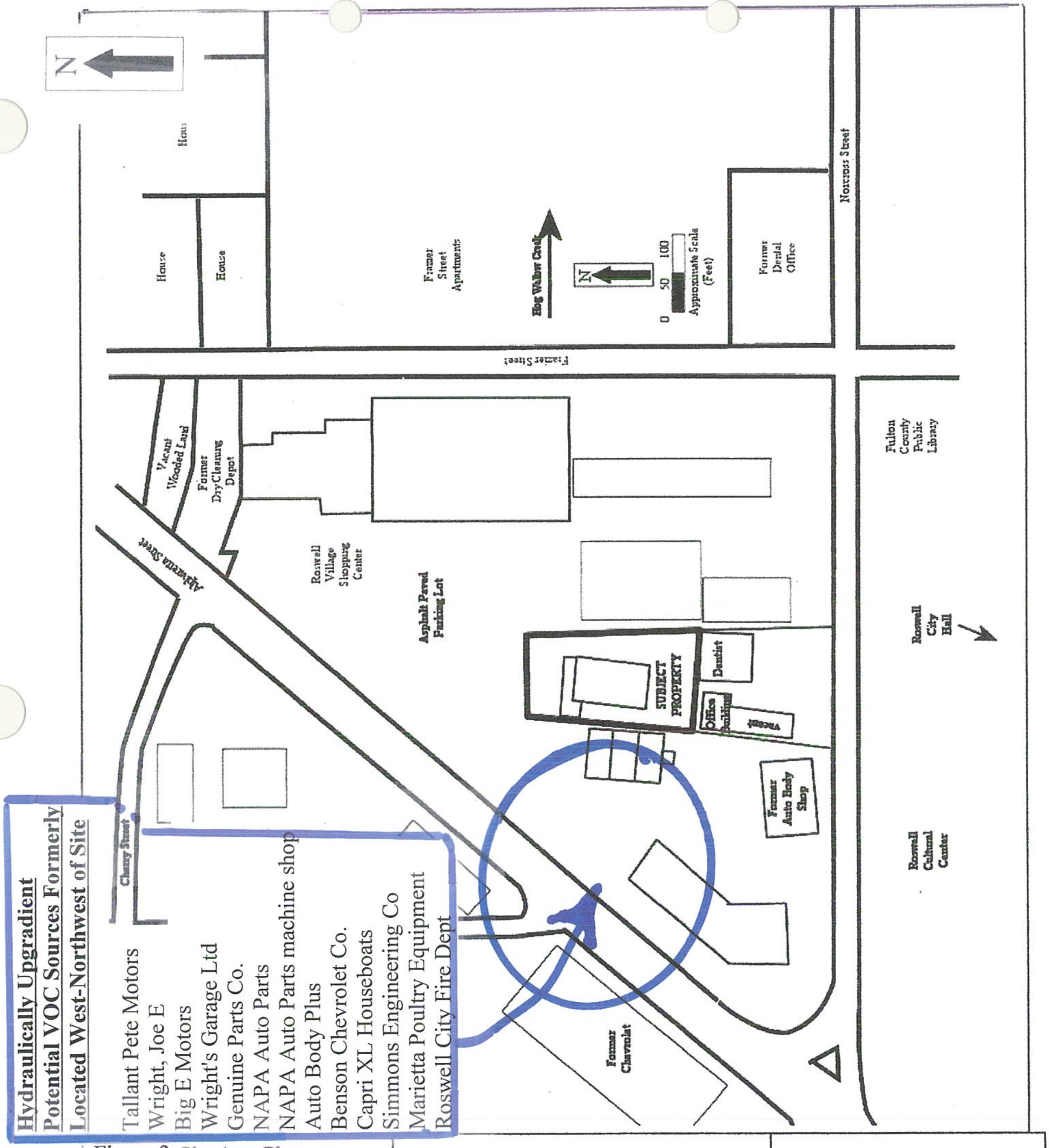


Figure 3: Site Area Plan
Locations Of Cross-Sections
Roswell Cleaners and Coin Laundry
1013 Alpharetta Street
Roswell, Fulton County, Georgia

aec
Atlanta Environmental Consultants

Drawn By: Terri Drabek

Checked By: Peter Kallay, P.E.

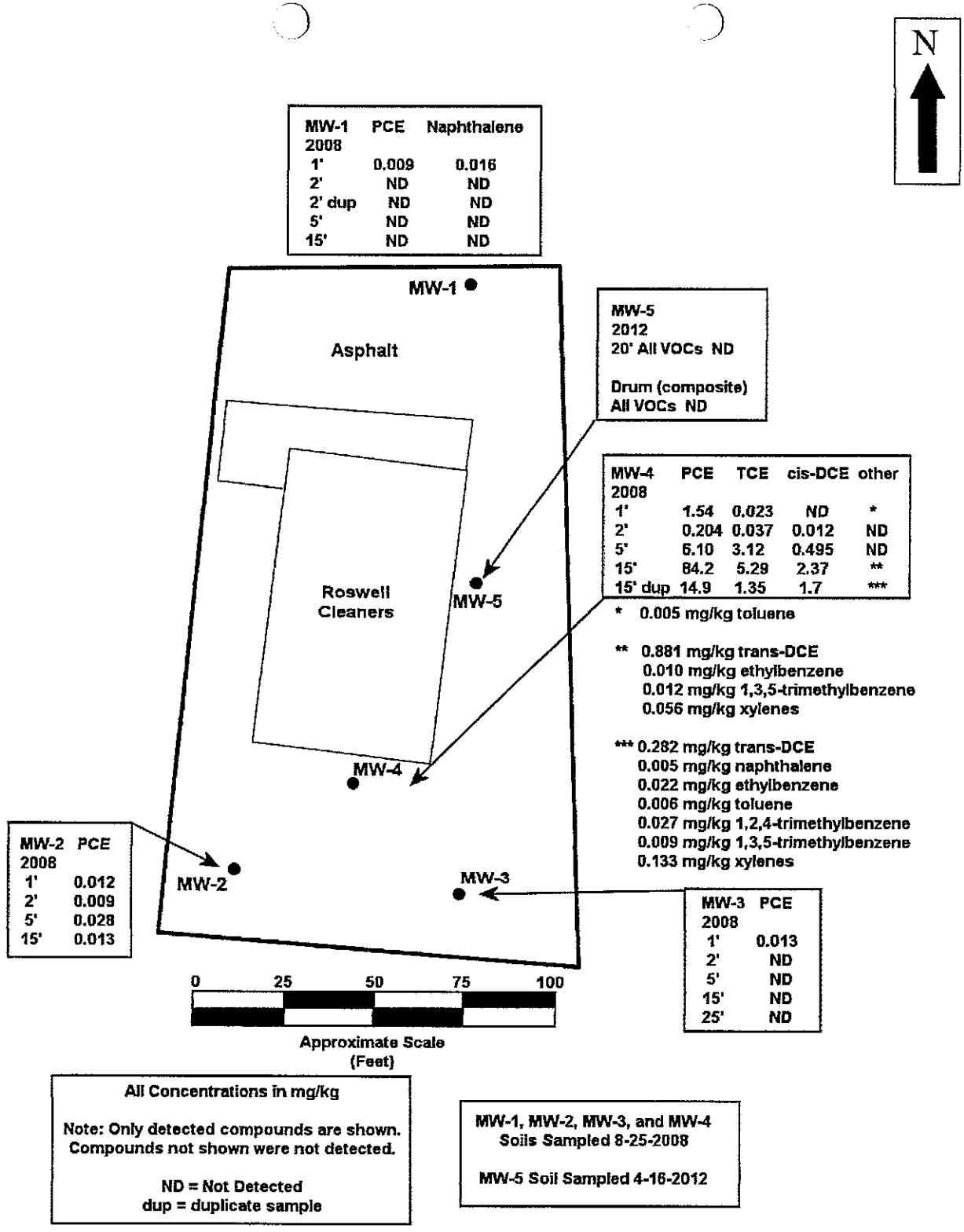


Figure 4: Soil Boring Locations Analytical Results

Roswell Cleaners and Coin Laundry
1013 Alpharetta Street
Roswell, Fulton County, Georgia

aec
Atlanta Environmental Consultants

Drawn By: Terri Drabek

Checked By: Peter Kallav, P.E.

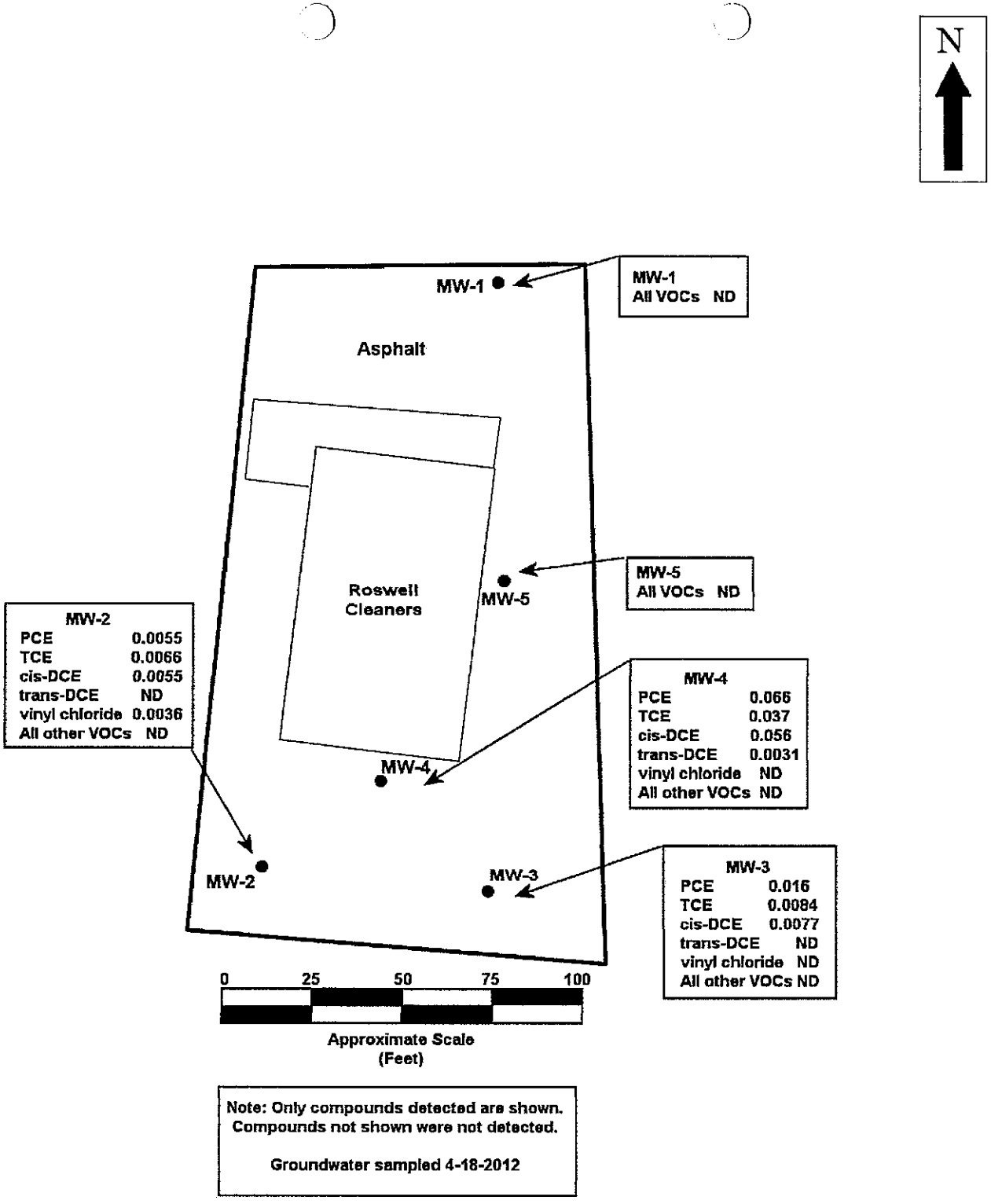


Figure 5: Monitor Wells and Groundwater Analytical Results

Roswell Cleaners and Coin Laundry
1013 Alpharetta Street
Roswell, Fulton County, Georgia

aec
Atlanta Environmental Consultants

Drawn By: Terri Drabek

Checked By: Peter Kallav, P.E.

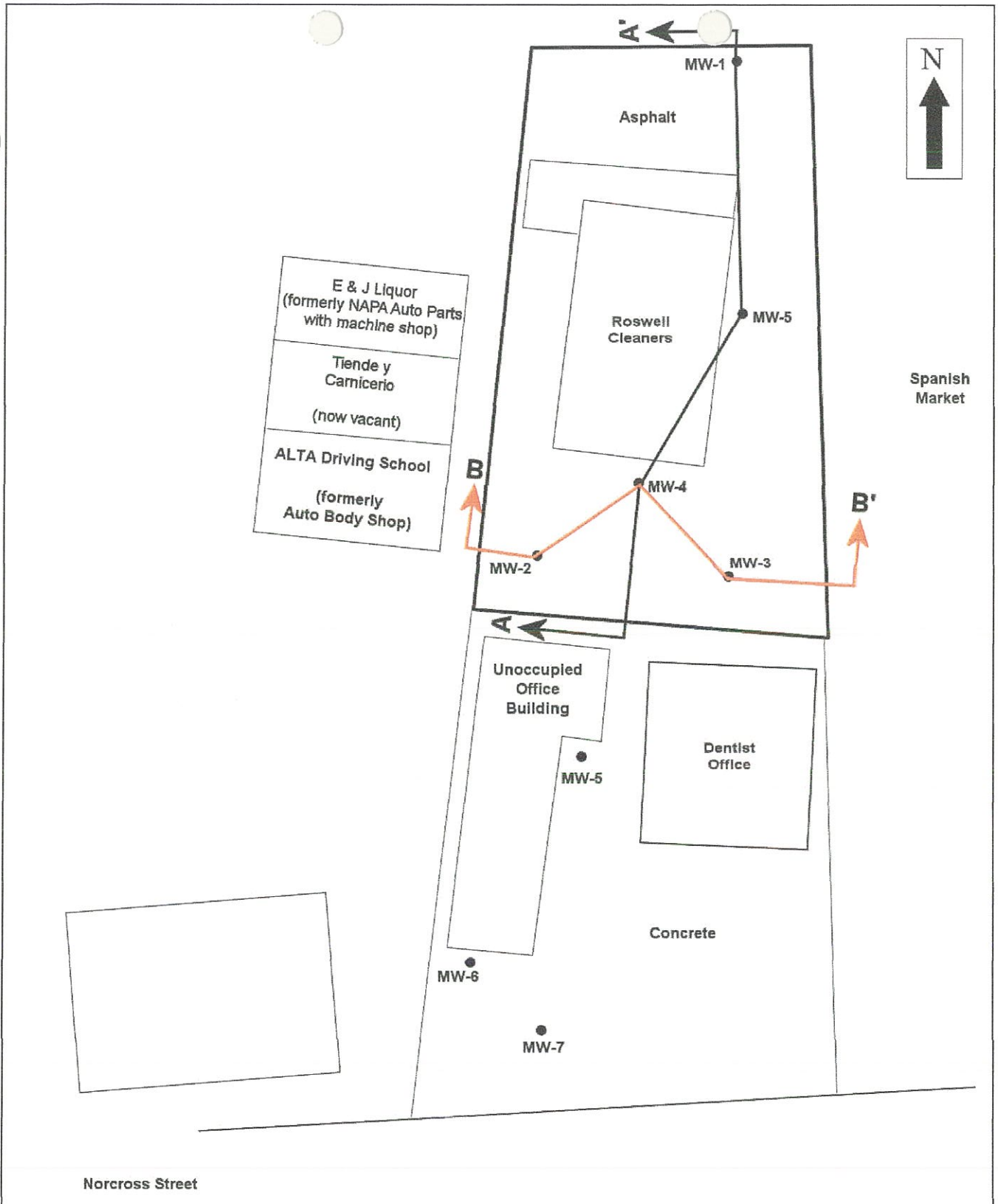


Figure 6: Site Plan Showing Locations of Cross-Sections

Roswell Cleaners and Coin Laundry
1013 Alpharetta Street
Roswell, Fulton County, Georgia

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Atlanta Environmental Consultants

Drawn By: Terri Drabek

Checked By: Peter Kallav, P.E.

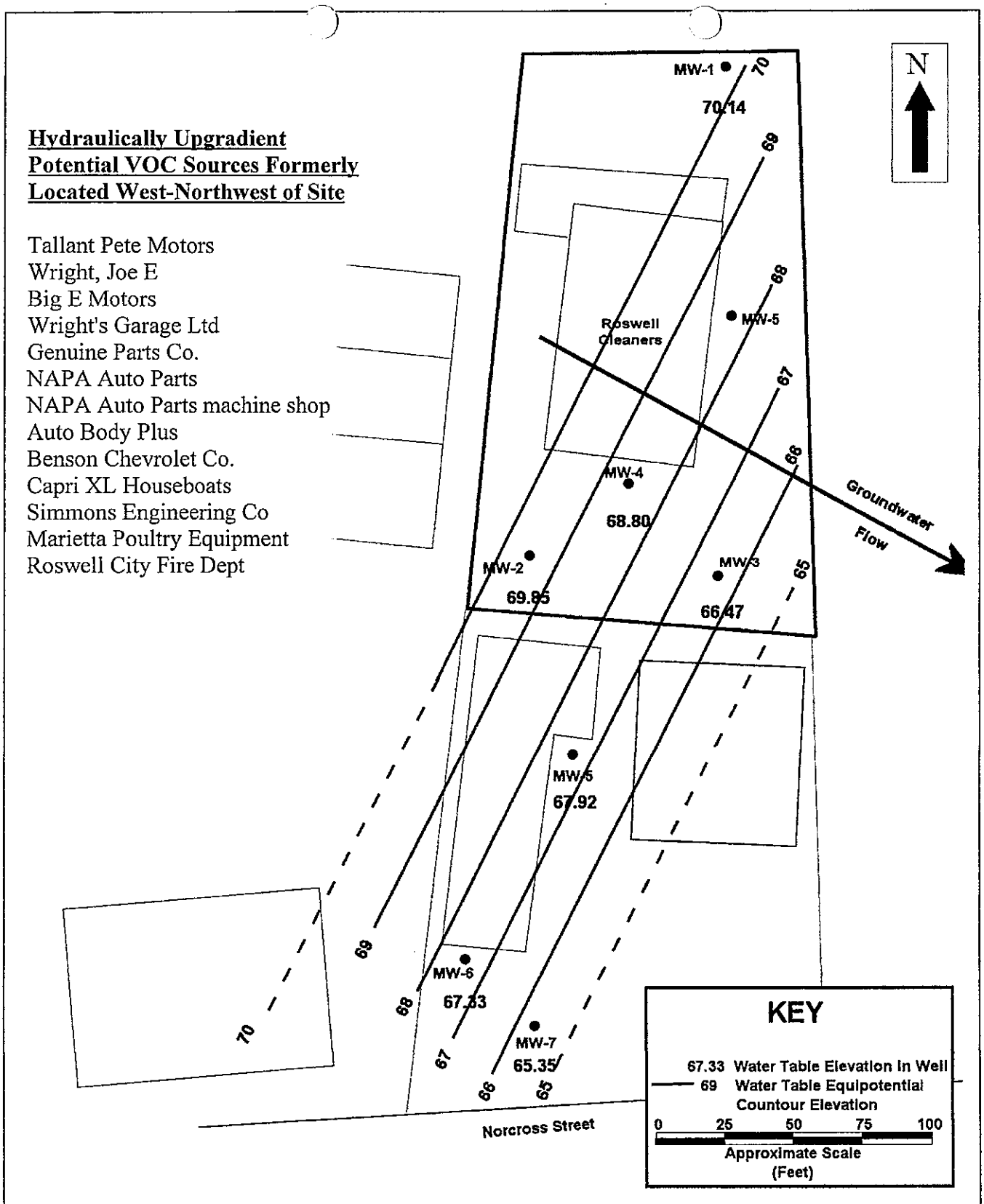

Figure 7a: Potentiometric Map, 08/27/2008

Roswell Cleaners and Coin Laundry
1013 Alpharetta Street
Roswell, Fulton County, Georgia

aec
Atlanta Environmental Consultants

Drawn By: Terri Drabek

Checked By: Peter Kallay, P.E.

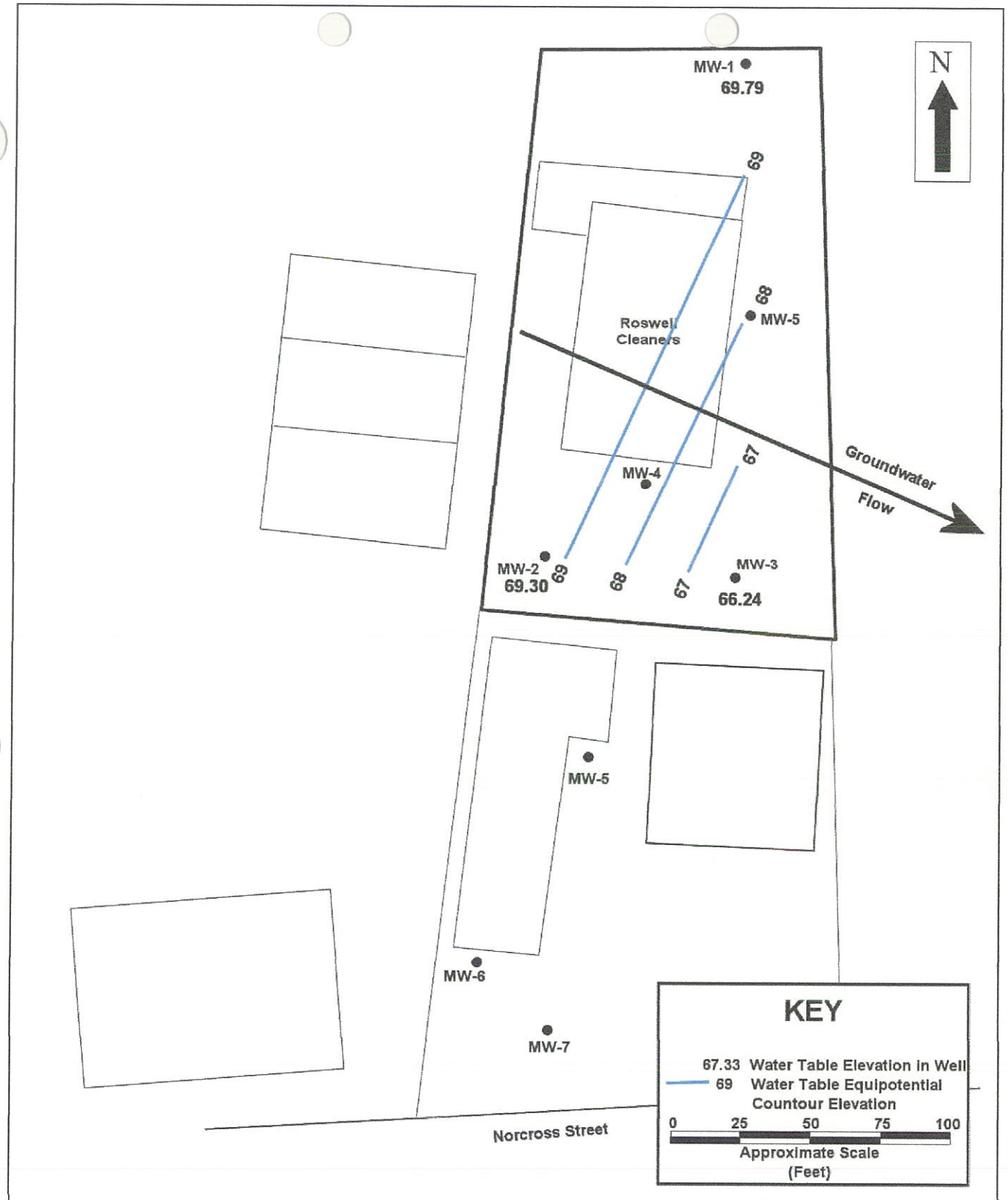

Figure 7B
Potentiometric Map, 09/28/2008

Roswell Cleaners and Coin
Laundry
1013 Alpharetta Street
Roswell, Fulton County, Georgia

aec
Atlanta Environmental Consultants

Drawn By: Terri Drabek

Checked By: Peter Kallay, P.E.

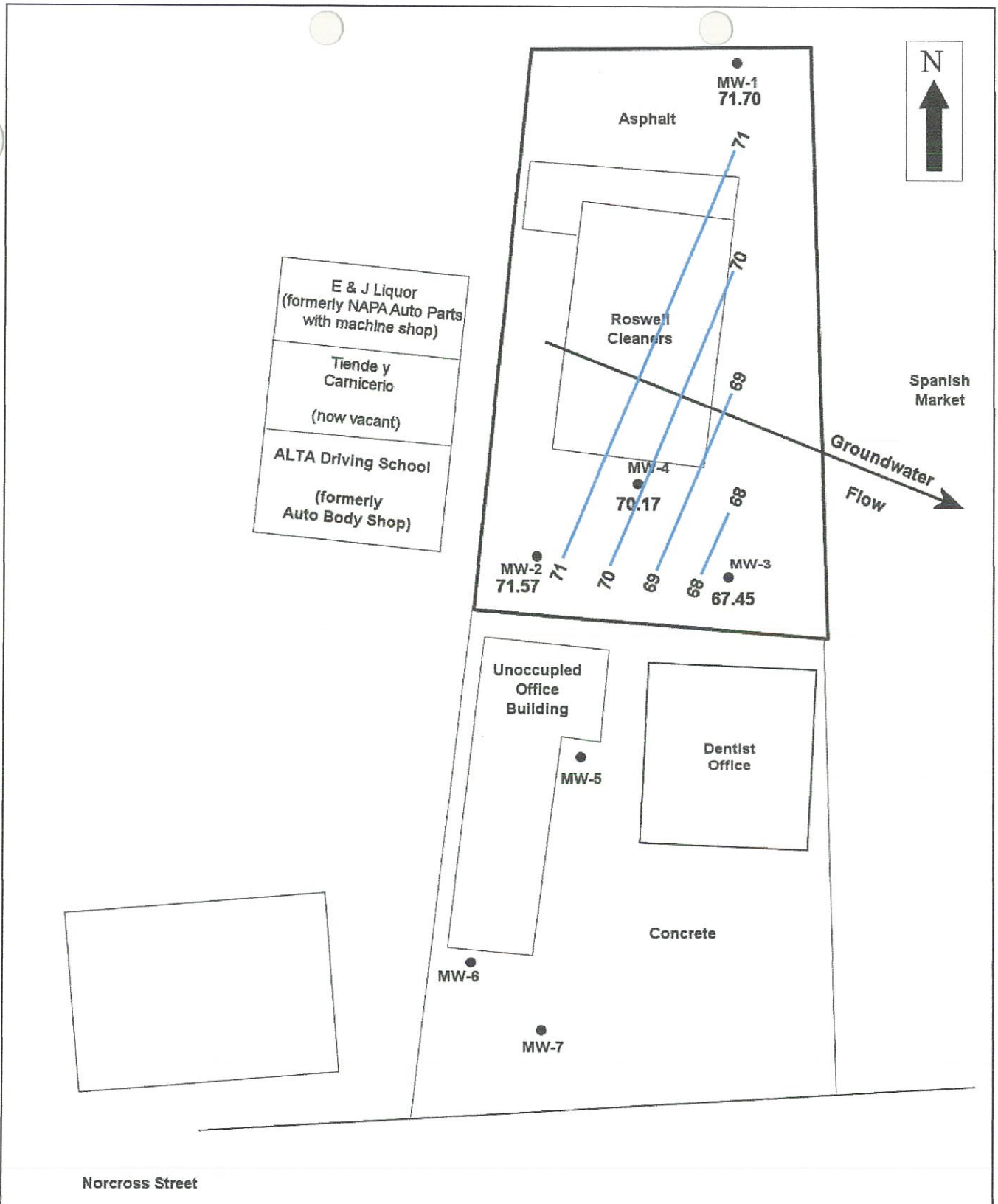

Figure 7C: Potentiometric Map, 04-16-2012

Roswell Cleaners and Coin
Laundry
1013 Alpharetta Street
Roswell, Fulton County, Georgia

aec
Atlanta Environmental Consultants

Drawn By: Terri Drabek

Checked By: Peter Kallay, P.E.

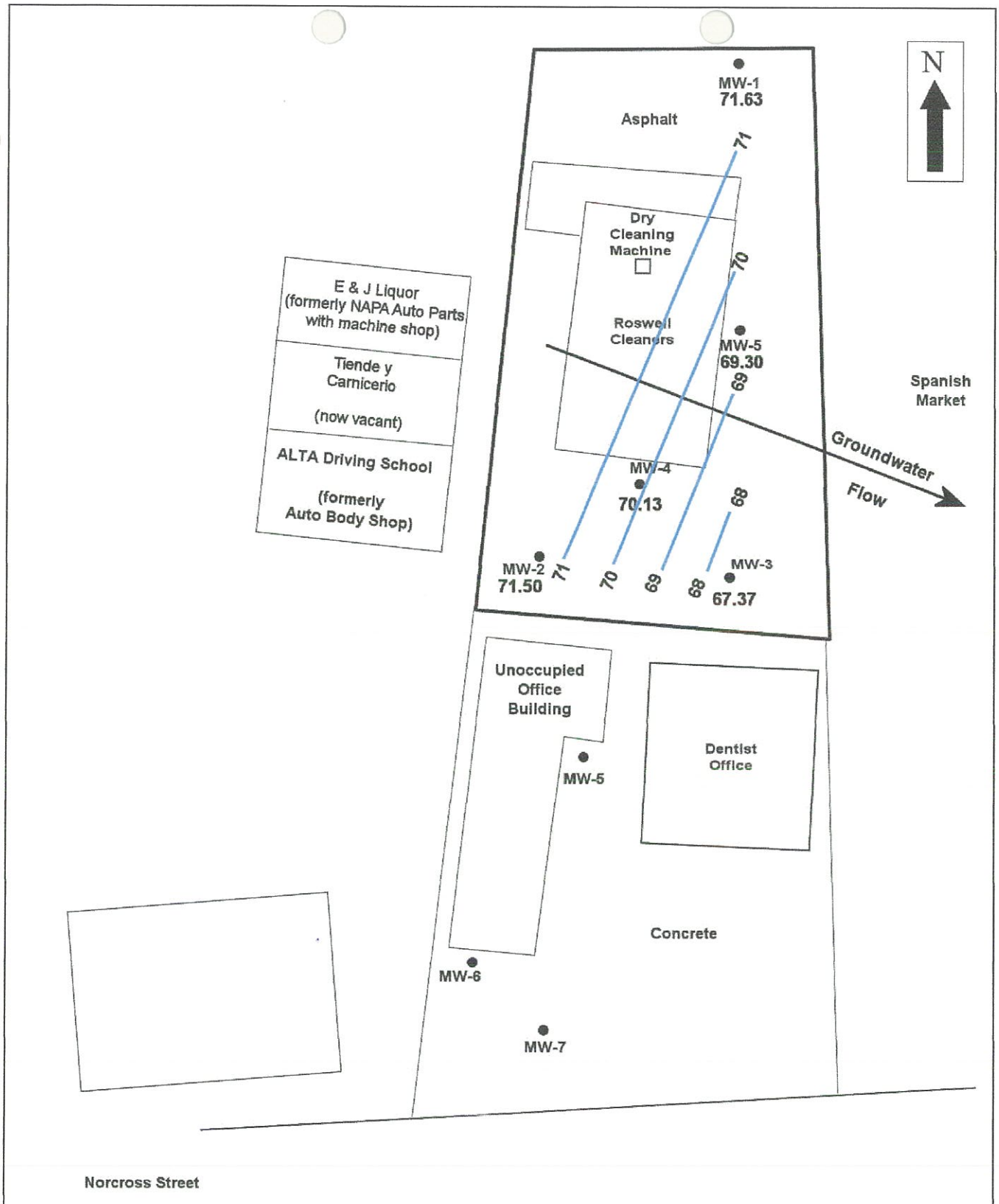

Figure 7D: Potentiometric Map, 04-18-2012

Roswell Cleaners and Coin
Laundry
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Drawn By: Terri Drabek

Checked By: Peter Kallay, P.E.

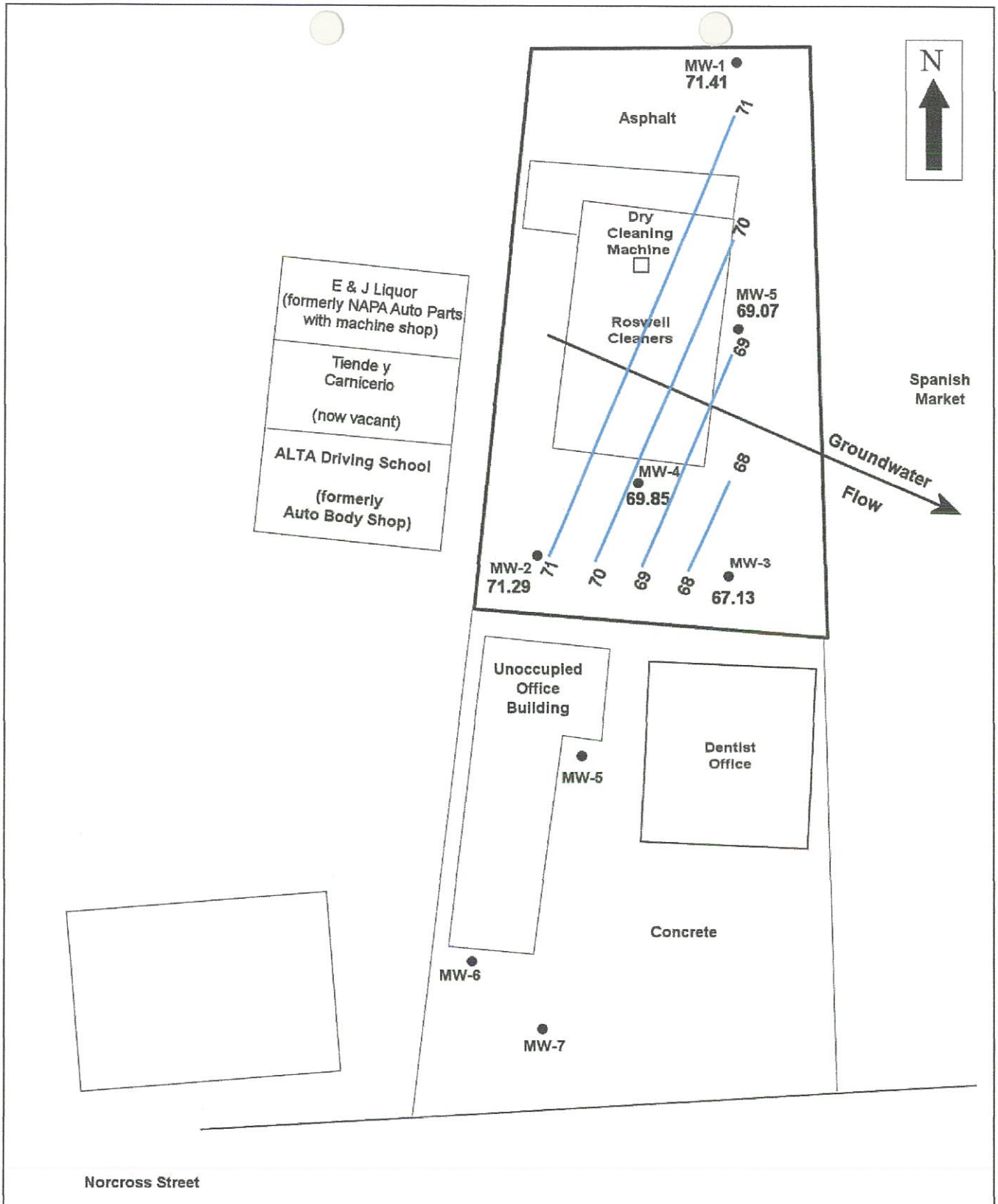


Figure 7E: Potentiometric Map, 05-16-2012

Roswell Cleaners and Coin
Laundry
1013 Alpharetta Street
Roswell, Fulton County, Georgia

aec
Atlanta Environmental Consultants

Drawn By: Terri Drabek

Checked By: Peter Kallav, P.E.

Hydraulically Upgradient Potential VOC Sources Formerly Located West-Northwest of Site

Tallant Pete Motors
Wright, Joe E
Big E Motors
Wright's Garage Ltd
Genuine Parts Co.
NAPA Auto Parts
NAPA Auto Parts machine shop
Auto Body Plus
Benson Chevrolet Co.
Capri XL Houseboats
Simmons Engineering Co
Marietta Poultry Equipment
Roswell City Fire Dept

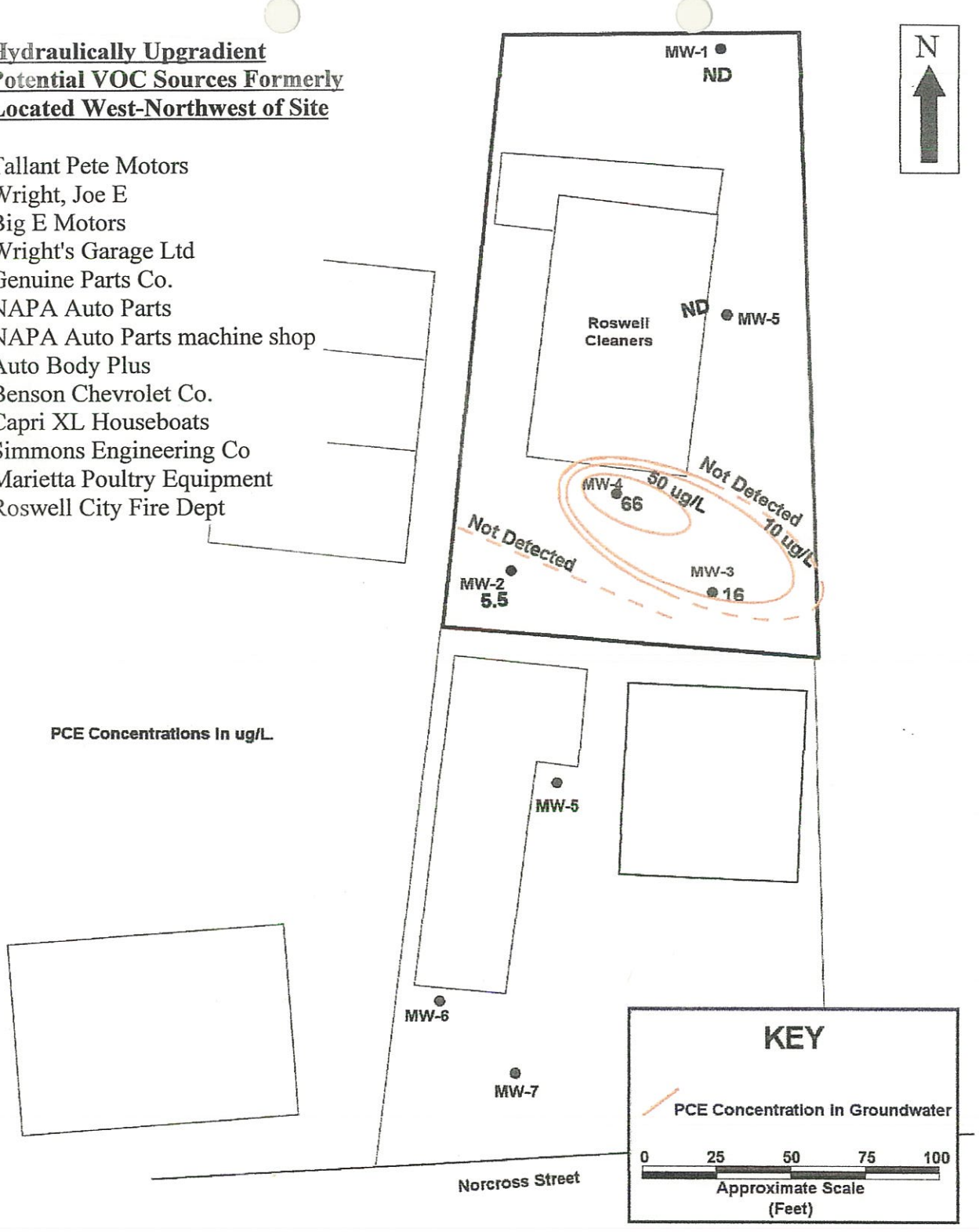


Figure 8a: PCE Concentrations in Groundwater

Roswell Cleaners and Coin Laundry
1013 Alpharetta Street
Roswell, Fulton County, Georgia

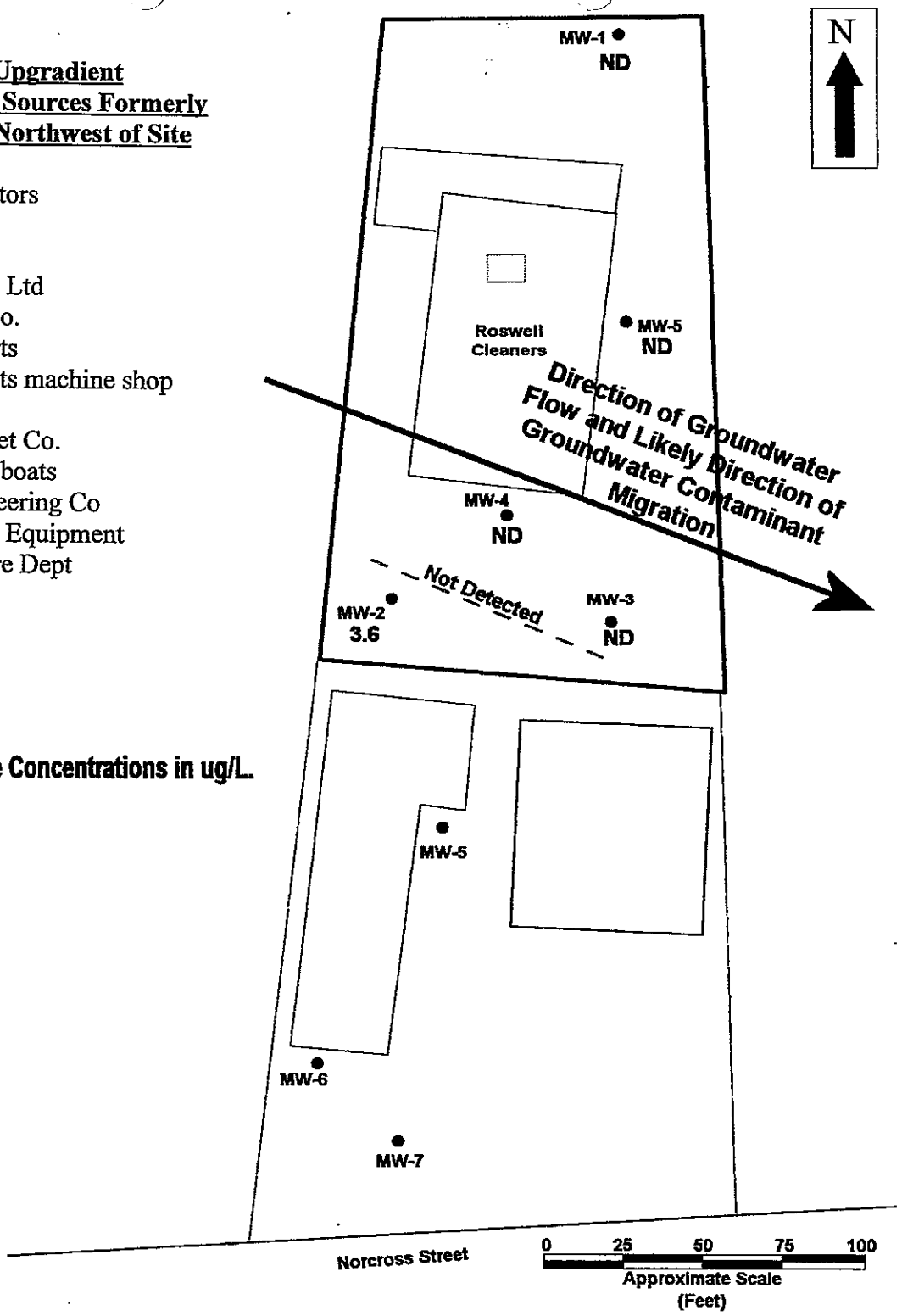
aec
Atlanta Environmental Consultants

Drawn By: Terri Drabek

Checked By: Peter Kallav, P.E.

Hydraulically Upgradient Potential VOC Sources Formerly Located West-Northwest of Site

Tallant Pete Motors
Wright, Joe E
Big E Motors
Wright's Garage Ltd
Genuine Parts Co.
NAPA Auto Parts
NAPA Auto Parts machine shop
Auto Body Plus
Benson Chevrolet Co.
Capri XL Houseboats
Simmons Engineering Co
Marietta Poultry Equipment
Roswell City Fire Dept



Vinyl Chloride Concentrations in ug/L.

Groundwater samples were collected 4-18-12

Figure 8b: Vinyl Chloride Concentrations in Groundwater

Roswell Cleaners and Coin Laundry
1013 Alpharetta Street
Roswell, Fulton County, Georgia

aec
Atlanta Environmental Consultants

Drawn By: Terri Drabek

Checked By: Peter Kallav, P.E.

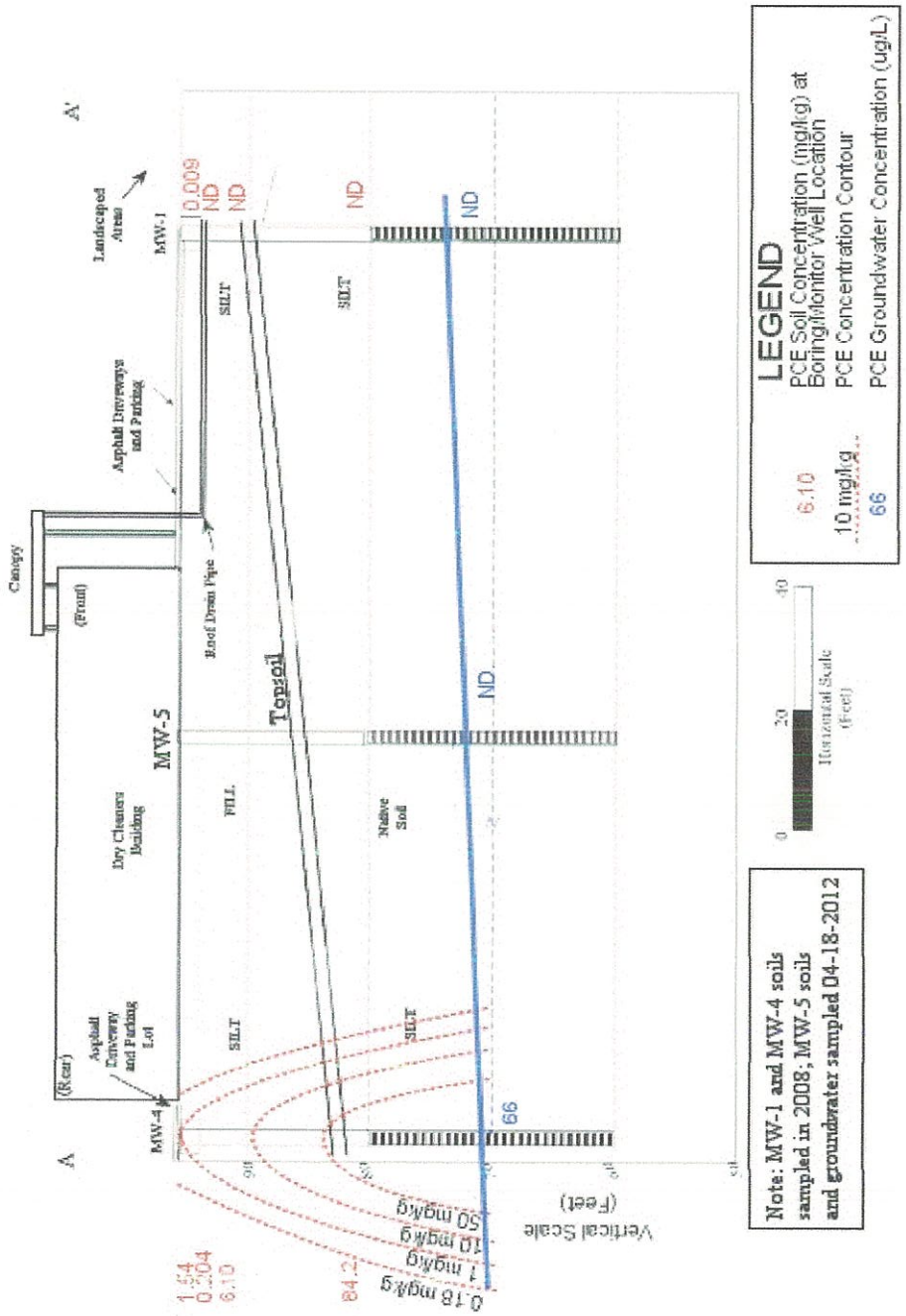


Figure 9: Cross-Section A-A'

Roswell Cleaners and Coin Laundry
1013 Alpharetta Street
Roswell, Fulton County, Georgia

aec
Atlanta Environmental Consultants

Drawn By: Terri Drabek

Checked By: Peter Kallay, P.E.

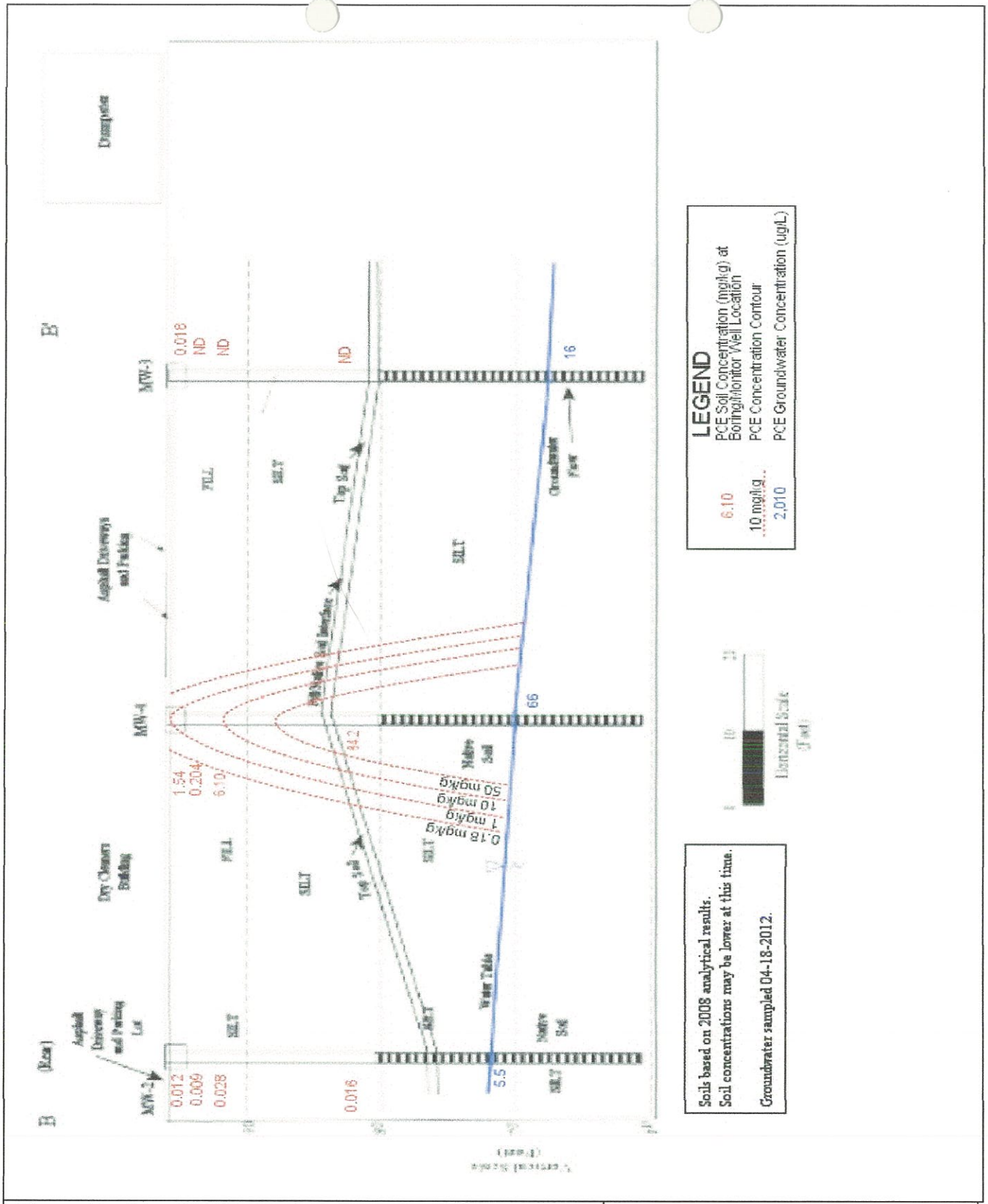


Figure 10: Cross-Section B-B'

Roswell Cleaners and Coin Laundry
1013 Alpharetta Street
Roswell, Fulton County, Georgia

aec
Atlanta Environmental Consultants

Drawn By: Terri Drabek

Checked By: Peter Kallav, P.E.

TABLES

TABLE 1. Groundwater Analytical Results
Roswell Cleaners and Coin Laundry
1013 Alpharetta Street, Roswell, Fulton County, Georgia 30075

Groundwater samples were collected on August 27, 2008 and April 18, 2012

SAMPLE ID	ANALYTICAL RESULTS - Milligrams Per Liter (mg/L)					
	PCE	TCE	cis-DCE	trans-DCE	VC	OTHER
MW-1 2008	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.002)	
MW-1 2012	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.002)	
MW-2 2008	ND (0.005)	ND (0.005)	0.014	ND (0.005)	0.003	*
MW-2 2012	0.0055	0.0066	0.0055	ND (0.005)	0.0036	
MW-3 2008	0.150	0.152	0.177	0.004	ND (0.002)	
MW-3 2012	0.016	0.0084	0.0077	ND (0.005)	ND (0.002)	
MW-4 2008	2.010	0.156	0.315	0.036	ND (0.002)	
MW-4 2012	0.066	0.037	0.056	0.0031	ND (0.002)	
MW-5 Bowen 12	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.002)	
MW-5 Lindsay 08	ND (0.005)	ND (0.005)	0.005	ND (0.005)	ND (0.002)	
MW-6 Lindsay 08	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.002)	
MW-7 Lindsay 08	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.002)	
Eqpt Blank 08	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.002)	**
Trip Blank 08	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.002)	

NOTES:

Concentrations are given in milligrams per liter (mg/L)

Volatile Organic Compounds (VOC) were analyzed by EPA Method 8260B

ND = Not Detected (Below Quantitation Limits)

PCE = Tetrachloroethene, also known as perchloroethylene, tetrachloroethylene, or perc

TCE = Trichloroethene, also known as trichloroethylene

DCE = Dichloroethene

VC = Vinyl Chloride

Lindsay = Sample was collected on Lindsay Property; Bowen - Sample was collected on Bowen Property.

2008 or 08 = Sample was collected during 2008 sampling event on August 27, 2008

2012 or 12 = Sample was collected during 2012 sampling event on April 18, 2012

* = Chloroform 0.004 mg/l

** = Naphthalene 0.006 mg/l

Table 2. Water Table Elevations
Roswell Cleaners and Coin Laundry
1013 Alpharetta Street
Roswell, Fulton County, Georgia

MONITORING WELL	DATE MEASURED	TOP-OF-CASING ELEVATION	DEPTH TO WATER	WATER TABLE ELEVATION	NOTES
		(feet)	(feet)	(feet)	
MW-1	8/26/2008	93.77	23.56	70.21	
MW-1	8/27/2008	93.77	23.63	70.14	
MW-1	9/28/2008	93.77	23.98	69.79	slug test date
MW-1	4/16/2012	93.77	22.07	71.70	
MW-1	4/18/2012	93.77	22.14	71.63	
MW-1	5/16/2012	93.77	22.36	71.41	
MW-2	8/26/2008	94.12	24.49	69.63	
MW-2	8/27/2008	94.12	24.27	69.85	
MW-2	9/28/2008	94.12	24.82	69.30	slug test date
MW-2	4/16/2012	94.12	22.55	71.57	
MW-2	4/18/2012	94.12	22.62	71.50	
MW-2	5/16/2012	94.12	22.83	71.29	
MW-3	8/26/2008	94.87	28.46	66.41	
MW-3	8/27/2008	94.87	28.40	66.47	
MW-3	9/28/2008	94.87	28.63	66.24	slug test date
MW-3	4/16/2012	94.87	27.42	67.45	
MW-3	4/18/2012	94.87	27.50	67.37	
MW-3	5/16/2012	94.87	27.74	67.13	
MW-4	8/26/2008	94.57	26.22	68.35	
MW-4	8/27/2008	94.57	25.77	68.80	
MW-4	4/16/2012	94.57	24.40	70.17	
MW-4	4/18/2012	94.57	24.44	70.13	
MW-4	5/16/2012	94.57	24.72	69.85	
MW-5 Bowen	4/18/2012	94.82	25.52	69.30	
MW-5 Bowen	5/16/2012	94.82	25.75	69.07	
MW-5 Lindsay	8/26/2008	82.92	15.22	67.70	
MW-5 Lindsay	8/27/2008	82.92	15.00	67.92	
MW-6 Lindsay	8/26/2008	81.59	14.60	66.99	
MW-6 Lindsay	8/27/2008	81.59	14.26	67.33	
MW-7 Lindsay	8/26/2008	81.18	16.00	65.18	
MW-7 Lindsay	8/27/2008	81.18	15.83	65.35	

Notes:

1. Top of Casing Elevations are relative elevations, relative to an assumed height of instrument (H.I.) of 100.00 feet on August 26, 2008.

ATTACHMENTS

aec SOIL BORING LOG

Atlanta Environmental Consultants

Field Rep. Peter T. Kallay, P.E.
Project No. REB-2401, 1013 Alpharetta St., Roswell, GA
Driller Betts Environmental Recovery

Boring No. MW-1
Date August 25, 2008
Crew Sam Conner, Jason Allwood, Paul Summers

Depth From	Depth To	Soil Description	Time	Type	1st 6"	2nd 6"	3rd 6"	Reco-very	PID/ FID
		Surface: Asphalt Pavement	9:30						
0.25	2	Red-brown SILT with some clay and some sand. Damp, no odor, lumpy, some hard lumps. FILL	9:45	HA					3.3
2	5	same as above, except some black organic matter is present; some beige mottling was observed. Damp, no odor. FILL	9:55	HA					0.8
5	7	Black, dark grey, light grey and red-brown mottled clayey SILT. Damo, slighr odor of aged sewage. FILL	10:30	SPT	3	3	3	3 45%	0.4
7	10	Red-brown clayey SILT with a little mica.	10:40	SPT	4	6	14	14	0.3
11	15	Underlain by nearly horizontally stratified thin brown, dark brown, tan and beige layers, foliated, with some mica, clayey SILT. Damp, no odor							
15	20	Same as above, but red-brown and tan colors predominate. Damp, no odor.	10:50	SPT	7	7	8	9	0.2
20	25	Same as above, but there are more black and dark brown layers.	10:55	SPT	11	12	21	28	0.1
25		Same as above, but red, black, brown, tan and beige layers are curved, almost as if conchoidal. Moist, no odor.	11:05	SPT	4	6	8	9	0.1
		BORING TERMINATED at 35 feet							

Method: Hollow-Stem Augers
Auger [X] Size 6 1/4 OD
Wash [ ] Size _____ OD
Core [ ] Size _____ OD
Casing Size: 2"
Undisturbed SPT _____
Water Loss _____ Gallons

Weather Cloudy, overcast, light rain
Standby Time _____
Water Level 25 feet
Borehole Depth 35 feet
Date Completed 8/25/2008

aec SOIL BORING LOG

Atlanta Environmental Consultants

Field Rep. Peter T. Kallay, P.E.
Project No. REB-2401, 1013 Alpharetta St., Roswell, GA
Driller Betts Environmental Recovery

Boring No. MW-2
Date August 25, 2008
Crew Sam Conner, Jason Allwood, Paul Summers

Depth From	Depth To	Soil Description	Time	Type	1st 6"	2nd 6"	3rd 6"	Reco-very	PID/ FID
		Surface: Asphalt Pavement	11:45						
0.25	2	Reddish-brown SILT with some clay and sand.	11:50	HA					1.1
		Damp, no odor. FILL							1.2
2	10	Same as above, damp, no odor. FILL	11:55	SPT	1	1	1	1	1.0
								45%	
10	15	Same as above, moist to wet, no odor. FILL	12:00	SPT	1	1	1	1	1.1
								100%	
15	16	Brown clayey SILT, more clayey than above	12:05	SPT	4	4	4	4	0.6
		wet, no odor. FILL						35%	
16	19	Quartz rocks, brown sandy SILT.							
19	20	Dk brown topsoil, moist to wet, no odor							
20	25	Green-grey silty CLAY, plastic.	12:15	SPT	1	2	1	2	0.3
		moist to wet, no odor (except topsoil odor)						70%	
25	30	Mottled tan, beige, brown sandy SILT with some							
		quartz gravel. Very loose and crumbly.	12:25	SPT	4	5	8	6	0.8
		Moist, no odor.						85%	
30	35	Same as above, but there are more black and	12:30	SPT	5	6	10	10	0.4
		dark brown layers. Moist to wet, no odor.							
35		Brown to red-brown SILT with a little clay and	12:45	SPT	4	5	6	5	0.2
		mica. Very loose and crumbly. Some gravel.							
		Wet, no odor.							
		BORING TERMINATED at 35 feet							

Method: Hollow-Stem Augers
Auger [X] Size 6 1/4 OD
Wash [ ] Size _____ OD
Core [ ] Size _____ OD
Casing Size: 2"
Undisturbed SPT _____
Water Loss _____ Gallons

Weather Partly Cloudy, rain earlier, warm
Standby Time _____.
Water Level 25 feet
Borehole Depth 35 feet
Date Completed 8/25/2008

aec SOIL BORING LOG

Atlanta Environmental Consultants

Field Rep. Peter T. Kallay, P.E.
Project No. REB-2401, 1013 Alpharetta St., Roswell, GA
Driller Betts Environmental Recovery

Boring No. MW-3
Date August 25, 2008
Crew Sam Conner, Jason Allwood, Paul Summers

Depth From	Depth To	Soil Description	Time	Type	1st 6"	2nd 6"	3rd 6"	Reco-very	PID/ FID
		Surface: Asphalt Pavement	1:25						
0.25	2	Red-brown silty CLAY, damp, no odor.	1:35	HA					0.4
		FILL							
2	5	Same as above, damp, no odor. FILL	1:40	HA					0.5
5	6	Same as above, damp, no odor.	1:45	SPT	1	3	5	6	0.3
6	10	Beige uniform grain size fine SAND with no						65%	
		fines. Damp. No odor. FILL							
10	15	Tan, beige, light brown fine SAND with a slight	1:55	SPT	4	14	16	22	0.3
		greenish cast. Very loose and crumbly.							
		Damp. No odor. FILL							
15	20	red-brown, tan, beige and various shades of	2:05	SPT	4	18	16	27	0.8
		brown layers sandy SILT. Damp, no odor.							
20	25	Same as above, but layers are mostly medium	2:20	SPT	15	23	27	35	0.7
		brown, grey and beige. Damp to moist. No odor.							
25	30	Same as above, moist, no odor.	2:30	SPT	6	7	7	8	0.4
30	35	Same as above, wet, no odor.	2:45						
		BORING TERMINATED at 35 feet							

Method: Hollow-Stem Augers
Auger [X] Size 6 1/4 OD
Wash [ ] Size _____ OD
Core [ ] Size _____ OD
Casing Size: 2"
Undisturbed SPT _____
Water Loss _____ Gallons

Weather Cloudy, overcast, light rain
Standby Time _____
Water Level 25 feet
Borehole Depth 35 feet
Date Completed 8/25/2008

aec SOIL BORING LOG

Atlanta Environmental Consultants

Field Rep. Peter T. Kallay, P.E.
Project No. REB-2401, 1013 Alpharetta St., Roswell, GA
Driller Betts Environmental Recovery

Boring No. MW-4
Date August 26, 2008
Crew Sam Conner, Jason Allwood

Depth From	Depth To	Soil Description	Time	Type	1st 6"	2nd 6"	3rd 6"	Reco-very	PID/ FID
		Surface: Asphalt Pavement	10:00						
0.25	1	Grey to beige sandy GRAVEL Dry, no odor	10:30	HA					1.3
		FILL							
1	5	Red-brown clayey SILT with some sand and	10:45	HA					3.3
		some mica. Damp, no odor, but slight odor							
		noticeable with depth. FILL							
5	10	brown and red-brown clayey SILT with clumps of	10:55	SPT	1	2	3	4	181
		black soil around 10 feet. Damp, solvent odor						90%	
10	12	Same as above, damp, solvent odor FILL	11:00	SPT	2	4	6	7	778
12	15	tan, brown, beige horizontally stratified						100%	
		sandy SILT							
15	20	tan-brown, beige and black layered sandy SILT	11:10	SPT	2	3	5	5	849
		Damp, solvent odor						90%	
20	25	Same as above, with a lot of mica, horizontally	11:25	SPT	6	5	4	4	36.5
		stratified. Damp, strong solvent odor.						65%	
25	30	Same as above, but layers are predominantly	11:40	SPT	6	4	5	5	34.4
		brown, beige and red. moist, slight odor						55%	
30	35	Same as above, wet, slight odor	11:55						
		BORING TERMINATED at 35 feet							

Method: Hollow-Stem Augers
Auger [X] Size 6 1/4 OD
Wash [ ] Size _____ OD
Core [ ] Size _____ OD
Casing Size: 2"
Undisturbed SPT _____
Water Loss _____ Gallons

Weather Cloudy, overcast, light rain
Standby Time _____
Water Level 25 feet
Borehole Depth 35 feet
Date Completed 8/26/2008

aec SOIL BORING LOG

Atlanta Environmental Consultants

Field Rep. Peter T. Kallay, P.E.
Project No. REB-2401, 1013 Alpharetta St., Roswell, GA
Driller Betts Environmental Recovery

Boring No. MW-5
Date April 16, 2012
Crew Jason Allwood, Paul Summers, Sam Conner

Depth From	Depth To	Soil Description	Time	Type	1st 6"	2nd 6"	3rd 6"	Reco-very	PID/ FID
0	0.25	Surface: Asphalt Pavement	2:50						
0.25	1	Red-brown sandy SILT, damp, no odor. FILL	2:55	CUT					0.2
		(Rig Shut down. Pin was bad. Replacement pin was procured and installed)							
5	6	Red-brown with tan streaks sandy SILT with some clay, some mica, moist, no odor. FILL	5:40	SPT	1	2	5		1.2
10	11	Same as above. FILL. Underlain by white and tan silty SAND with a few black specks. Sand has mixed grain sizes, some mica, moist, no odor	5:50	SPT	15	29	30		0.3
15	16	White and tan horizontally stratified SILT, very micaceous, underlain by brown, beige and lt grey 1-2" layers of silty SAND, micaceous of varying grain sizes. Moist. No odor.	6:05	SPT	7	7	8		0.4
20	21	Tan, beige, lt brown fine SILT, horizontally stratified with some mica. Moist, slight undetermined odor.	6:15	SPT	7	8	8		1.1
25	26	Grey, black and tan fine SILT, micaceous, horizontally stratified at 20 deg. Dip. Wet. no odor.	6:20	SPT	6	12	22		0.1
30	31	White, tan, silver, black and grey mottled SILT with some mica. Various colors predominate every few inches. Horizontally stratified with 20 deg. Dip. Wet, saturated. No odor.	6:35	SPT	12	9	10		0.3
		BORING TERMINATED at 35 feet							

Method: Hollow-Stem Augers
Auger [X] Size 6 1/4 OD
Wash [ ] Size _____ OD
Core [ ] Size _____ OD
Casing Size: 2"
Undisturbed SPT _____
Water Loss _____ Gallons

Weather Cloudy, warm, breezy
Standby Time _____
Water Level 26 feet
Borehole Depth 35 feet
Date Completed 0/16/2012

SLUG TESTS EVALUATION

Roswell Cleaners & Coin Laundry
1013 Alpharetta Street
Roswell, Fulton County, Georgia

Raw Data Collected in the Field 09-28-08

WELL	TIME H:MM:SS	Elapsed Time(min)	D.T.W. (feet)	Drawdown (feet)	% Recovery	% Drawdown
		min:sec				
MW-1						
Static Depth to Water 23.98 Feet. Test Started: 2:26 P.M.						
	2:26:00	0:00	24.48	0.50	0%	100%
	2:26:20	0:20	24.40	0.42	16%	84%
	2:26:40	0:40	24.32	0.34	32%	68%
	2:27:00	1:00	24.30	0.32	36%	64%
	2:28:00	2:00	24.28	0.30	40%	60%
	2:28:30	2:30	24.26	0.28	44%	56%
	2:29:00	3:00	24.24	0.26	48%	52%
	2:29:30	3:30	24.22	0.24	52%	48%
	2:30:00	4:00	24.21	0.23	54%	46%
	2:31:00	5:00	24.20	0.22	56%	44%
	2:32:00	6:00	24.19	0.21	58%	42%
	2:33:00	7:00	24.18	0.20	60%	40%
	2:34:00	8:00	24.17	0.19	62%	38%
	2:35:00	9:00	24.15	0.17	66%	34%
	2:36:00	10:00	24.14	0.16	68%	32%
	2:37:00	11:00	24.13	0.15	70%	30%
	2:38:00	12:00	24.12	0.14	72%	28%
	2:39:00	13:00	24.11	0.13	74%	26%
	2:40:00	14:00	24.10	0.12	76%	24%
	2:41:00	15:00	24.09	0.11	78%	22%
	2:43:00	17:00	24.08	0.10	80%	20%
	3:00:00	34.00	24.04	0.06	88%	12%
	3:26:00	60.00	23.99	0.01	98%	2%

WELL	TIME H:MM:SS	Elapsed Time(min)	D.T.W. (feet)	Drawdown (feet)	% Recovery	% Drawdown
MW-2						
Static Depth to Water 24.82 Feet. Test Started: 3:04 P.M.						
	3:04:00	0:00	25.15	0.33	0%	100%
	3:04:20	0:20	25.12	0.30	9%	91%
	3:04:40	0:40	25.10	0.28	15%	85%
	3:05:00	1:00	25.09	0.27	18%	82%
	3:06:00	2:00	25.07	0.25	24%	76%
	3:07:00	3:00	25.05	0.23	30%	70%
	3:08:00	4:00	25.03	0.21	36%	64%
	3:09:00	5:00	25.01	0.19	42%	58%
	3:10:00	6:00	25.00	0.18	45%	55%
	3:11:00	7:00	24.99	0.17	48%	52%
	3:15:00	11:00	24.97	0.15	55%	45%
	3:19:00	15:00	24.95	0.13	61%	39%
	3:22:00	18:00	24.92	0.10	70%	30%
	3:25:00	21:00	24.89	0.07	79%	21%
	3:51:00	47.00	24.86	0.04	88%	12%
	4:10:00	66.00	24.85	0.03	91%	9%

WELL	TIME H:MM:SS	Elapsed Time(min)	D.T.W. (feet)	Drawdown (feet)	% Recovery	% Drawdown
MW-3						
Static Depth to Water 28.63 Feet. Test Started: 3:32 P.M.						
	3:32:20	0:00	28.91	0.28	0%	100%
	3:32:20	0:20	28.89	0.26	7%	93%
	3:33:00	1:00	28.88	0.25	11%	89%
	3:33:30	1:30	28.86	0.23	18%	82%
	3:34:00	2:00	28.85	0.22	21%	79%
	3:34:30	2:30	28.84	0.21	25%	75%
	3:35:00	3:00	28.83	0.20	29%	71%
	3:36:00	4:00	28.82	0.19	32%	68%
	3:38:00	6:00	28.81	0.18	36%	64%
	3:40:00	8:00	28.80	0.17	39%	61%
	3:44:00	12:00	28.77	0.14	50%	50%
	3:48:00	16:00	28.74	0.11	61%	39%
	3:54:00	22:00	28.73	0.10	64%	36%
	4:07:00	35.00	28.69	0.06	79%	21%
	4:21:00	49.00	28.65	0.02	93%	7%

Analysis Method: Bouwer & Rice, 1976.

Parameter Values: Raw Data and Basic Calculations						
Parameter		MW-1	Units	MW-2		MW-3
Well Diameter		0.167	feet	0.167		0.167
Borehole Diameter		0.54	feet	0.54		0.54
Rc	eff well radius	0.18	feet	0.18		0.18
Well Depth		35	feet	35		35
Static D.T.W.		23.98	feet	24.82		28.63
H		11.02	feet	10.18		6.37
L		20	feet	20		20
Rw	well rad (undist aq)	0.27	feet	0.27		0.27
L/Rw		74.07		74.07		74.07
A		2.95		2.80		2.20
B		0.55		0.50		0.45
C		1.00		0.90		0.65
Yo		0.50	feet	0.33		0.28
Yt		0.19	feet	0.12		0.10
ln(Yo/Yt)		0.97		1.01		1.03
t		8	minutes	16		19
Re	eff radius (diss Y)	1.450	feet	1.313		1.105
ln(Re/Rw)		2.759		2.622		2.415
ln(H/Rw)		3.709		3.630		3.161
D	eff aquifer thick.	20	feet	20		20
	(assumed)					
S		0.20		0.20		0.20
n		0.35		0.35		0.35
dh/dl		0.049	ft/ft	0.049		0.049
V		0.054	feet/day	0.0271		0.0214

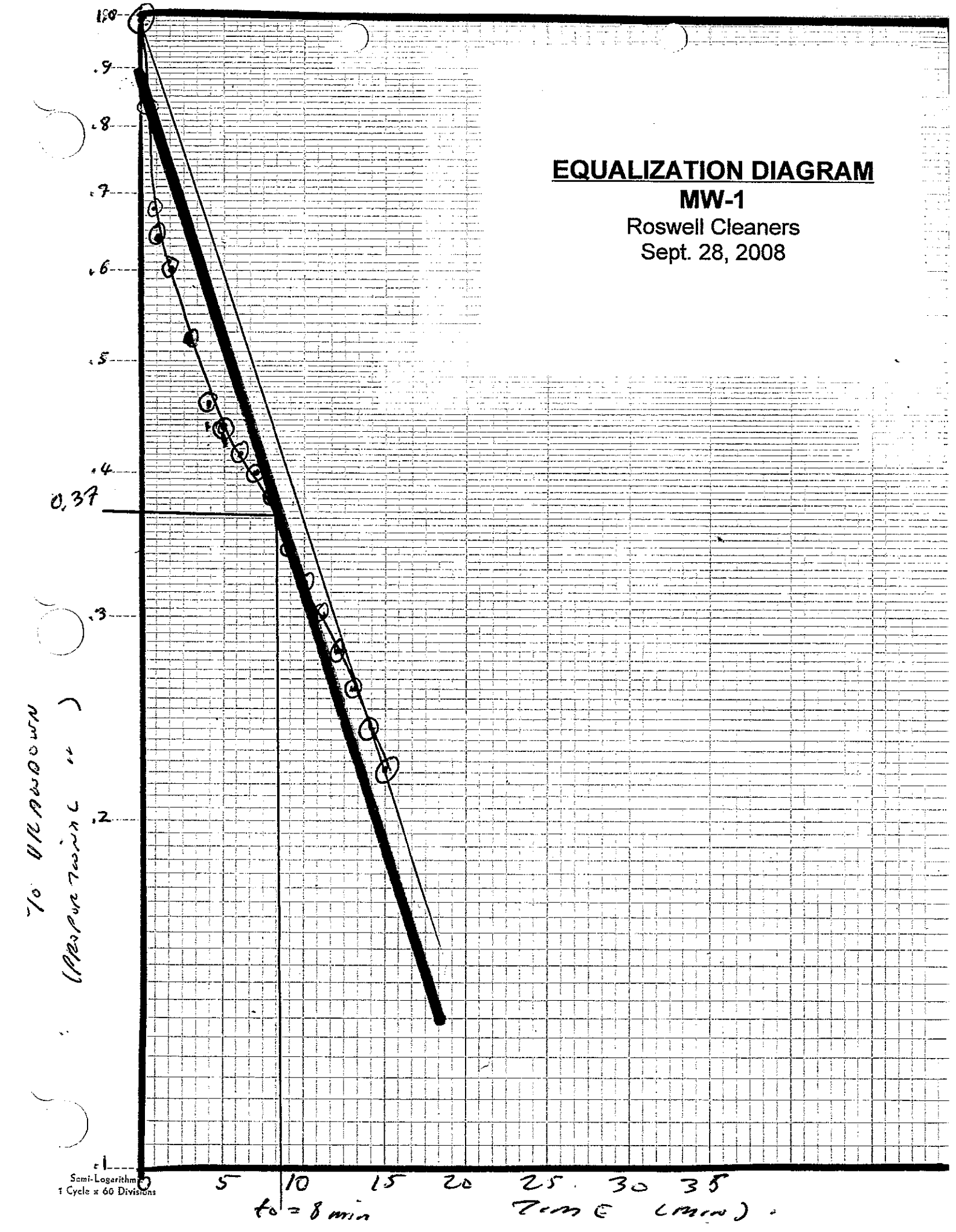
Reference: 1976. Bouwer, H. and R. C. Rice. A Slug Test for Determining Hydraulic Conductivity of Unconfined Aquifers with Completely or Partially Penetrating Wells. Water Resources Research V. 12 No. 3 pp. 423-429. June 1976. American Geophysical Union (AGU), Washington, DC

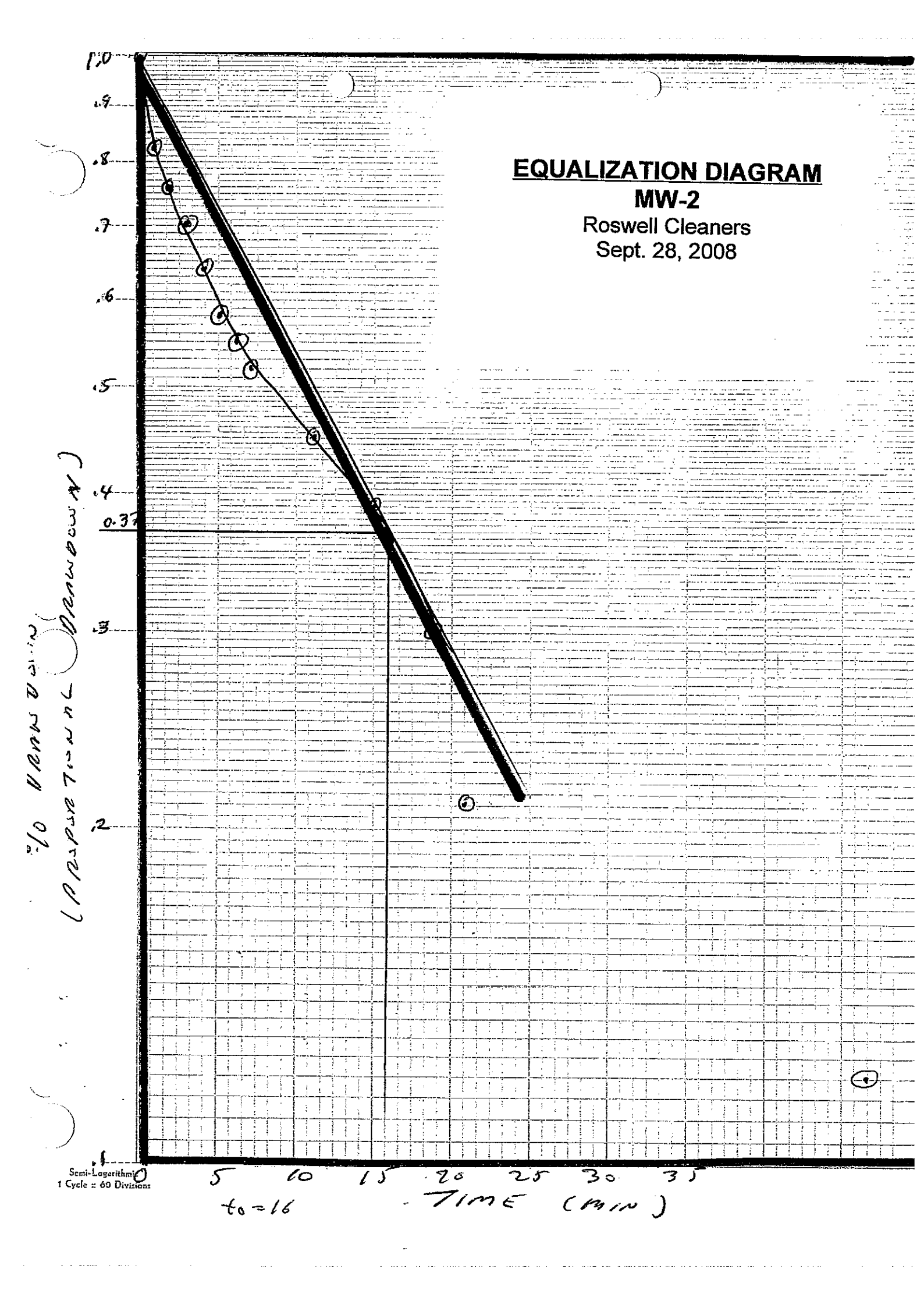
Detailed Calculations

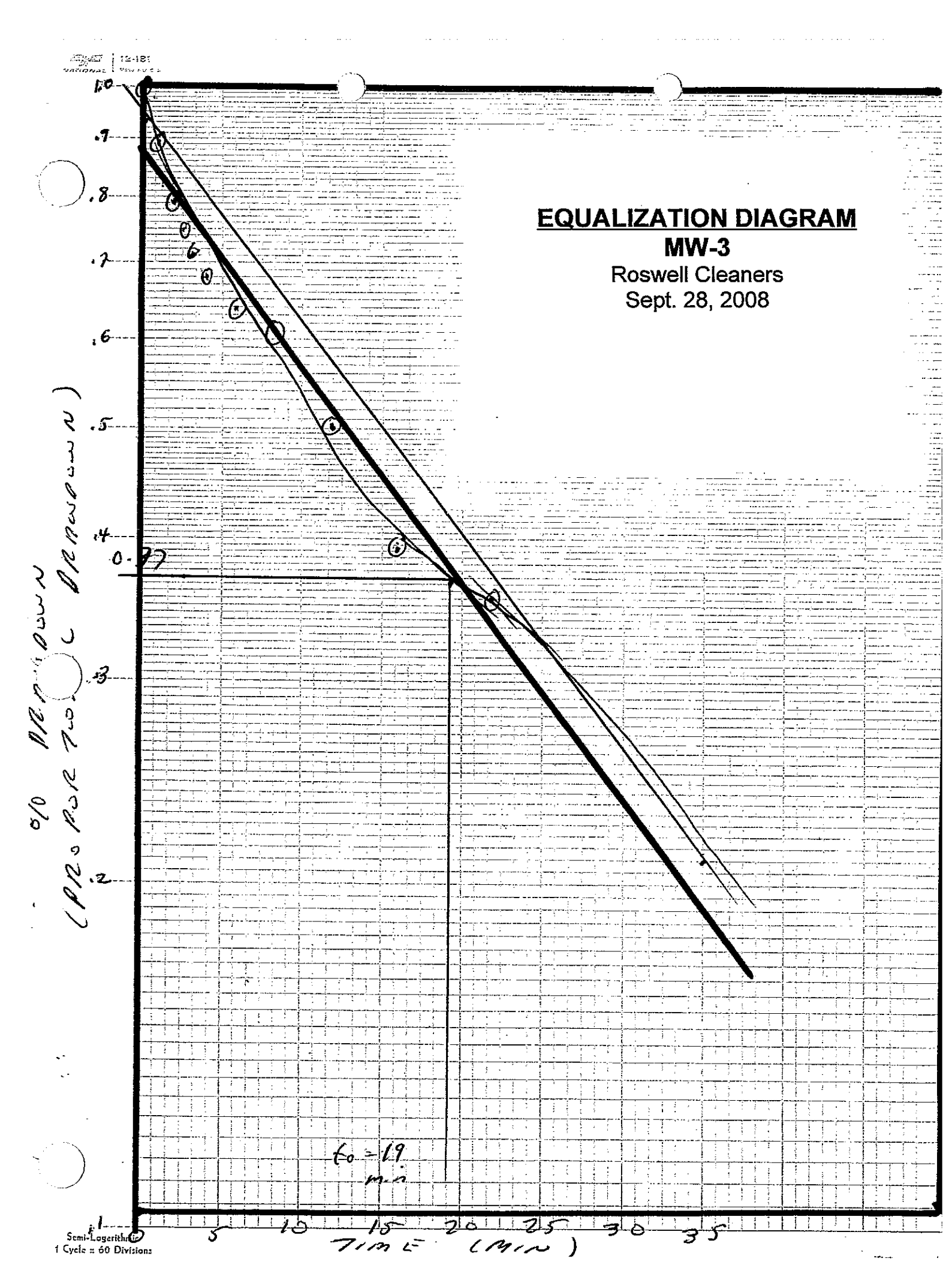
Parameter /Formula	MW-1		MW-2		MW-3	Eq #
$\frac{1}{t}\ \frac{\ln (Yo)}{Yt}$	0.120948		0.063225		0.05419	Eq (1)
$\frac{\ln(D - H)}{Rw}$	3.504333		8.460819		9.675086	Eq (2)
$\frac{A + B \ln [(D - H)/Rw]}{L/Rw}$	0.065845		0.0783		0.06615	Eq (4)
$\frac{1.1}{\ln(H/Rw)}$	0.296572		0.30305		0.347999	Eq (5)
$\ln \frac{(Re)}{Rw}$	2.759253		2.62226		2.414593	Eq (6)
$\frac{Rc * Rc \ln(Re/Rw)}{2 L}$	0.002235		0.002124		0.0020	Eq (7)
K = (Eq 1) (Eq 7)	2.70E-04 feet/sec		1.34E-04 feet/sec		1.06E-04 feet/sec	Eq (8)
Kd = K * 1440	0.39 feet/day		0.19 feet/day		0.15 feet/day	Eq (9)
Kg = Kd * 7.48	2.91 gpd/ft2		1.45 gpd/ft2		1.14 gpd/ft2	Eq (10)
T = Kg * D	58.2 gpd/ft		28.9 gpd/ft		22.8 gpd/ft	Eq (11)
$\frac{V = Kd * dh}{n \quad dl}$	0.054 feet/day		0.0271 feet/day		0.0214 feet/day	Eq (12)
Vy = V * 365	19.89 feet/year		9.88 feet/year		7.80 feet/year	Eq (13)

Average groundwater flow velocity = (product of 3 Vy values) ** 1/3

11.50
feet per year


EQUALIZATION DIAGRAM
MW-1
Roswell Cleaners
Sept. 28, 2008
1.0
.9
.8
.7
.6
.5
.4
0.37
.3
.2
.1
0
5
10
15
20
25
30
35
t_0 = 8 min
TIME (min)
C/C_0 (Measured Value)
Semi-Logarithm
1 Cycle x 60 Divisions


EQUALIZATION DIAGRAM
MW-2
Roswell Cleaners
Sept. 28, 2008
1.0
.9
.8
.7
.6
.5
.4
0.37
.3
.2
.1
0
5
10
15
20
25
30
35
TIME (MIN)
to = 16
Semi-Logarithmic
1 Cycle = 69 Divisions


EQUALIZATION DIAGRAM
MW-3
Roswell Cleaners
Sept. 28, 2008
1.0
.9
.8
.7
.6
.5
.4
.3
.2
.1
0.77
t_o = 19 min
5
10
15
20
25
30
35
TIME (MIN)
Semi-Logarithmic
1 Cycle = 60 Divisions

ACL

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Laboratory Report

ACL Project #: **63407**

Client Proj #: REB-2409 / Roswell Cleaners

Prepared For:

Atlanta Environmental Consultants
3440 Blue Springs Rd.
Suite 503
Kennesaw, GA 30144-0000

Attention: Mr. Peter Kallay

Report Date: 04/27/2012

This report contains 5 pages.
(including this cover page and chain of custody)

John Andros
Technical Director

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Explanation of Symbols and Abbreviations

Listed below are common symbols and abbreviations typically used in reporting technical data:

PQL	Practical Quantitation Limit	MDL	Method Detection Limit
BQL	Below Quantitation Limit	BDL	Below Method Detection Limit
MPN	Most Probable Number	TNTC	Too Numerous To Count
NTU	Nephelometric Turbidity Units	BTU	British Thermal Units
°C	Degrees Centigrade	°F	Degrees Fahrenheit
µmhos/cm	micromhos/cm	cfu	Colony Forming Unit
DF	Dilution Factor	meq	milliequivalents
kg	kilogram(s)	g	gram(s)
mg	milligram(s)	µg	microgram(s)
l or L	liter(s)	ml or mL	milliliter(s)
µl or µL	microliter(s)	m^3	cubic meter(s)
lb	pound(s)	ft^3	cubic foot(feet)
ft	foot(feet)	su	Standard Units
<	Less than	>	Greater than

mg/L, mg/kg — Units of concentration in milligrams per liter for liquids and milligrams per kilogram for solids. Also referred to as parts per million or "ppm" when the assumption is made that the specific gravity or density is one (1 g/mL).

µg/L, µg/kg — Units of concentration in micrograms per liter for liquids and micrograms per kilogram for solids. Also referred to as parts per billion or "ppb" when the assumption is made that the specific gravity or density is one (1 g/mL).

wt % — Units of concentration expressed on a weight/weight basis (e.g. grams per 100 grams).

Surrogate — Compound(s) added by the laboratory for quality control monitoring.

mg/kg,dw — Units of concentration in milligrams per kilogram (dry weight basis).

Data Qualifiers:

B	Analyte was also detected in the method blank
E	Estimated value - analyte was detected at concentration greater than upper calibration limit
F	Estimated value - analyte should have been tested as a field parameter
H	Estimated value - sample was analyzed beyond the accepted holding time
J	Estimated value - analyte was detected < PQL and ≥ MDL
L	The batch-specific LCS and/or LCSD was not within lab control limits for this analyte
M	The batch-specific MS and/or MSD was not within lab control limits for this analyte
R	The RPD between batch-specific sample/dup or MS/MSD was not within lab control limits for this analyte
S	The surrogate recovery was not within quality control limits
Z	Laboratory specific qualifier – refer to case narrative
*	Performed in strict accordance with the procedures and controls of the ACL quality system, but not currently in the NELAC list of certified analytes/methods

Solid samples (i.e. soil, sludge, solid waste) are reported on a wet weight basis unless otherwise noted. Estimated uncertainty values are available upon request.

Representation and Limitation of Liability – The accuracy of all analytical results for samples begins as it is received by the laboratory. The integrity of the sample begins at the time it is placed in the possession of authorized ACL personnel. All other warranties, expressed or implied, are disclaimed. Liability is limited to the cost of the analysis.

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Client: Atlanta Environmental Consultants
3440 Blue Springs Rd.
Suite 503
Kennesaw, GA 30144-0000

Contact: Mr. Peter Kallay

Client Proj #: REB-2409 / Roswell Cleaners
ACL Project #: 63407
Date Received: 04/17/2012
Date Reported: 04/27/2012

Volatile Organics (5035/8260B)

Sample ID: MW-5 Drum
ACL Sample #: 293171
Units: mg/kg

Matrix: Soil
Date Sampled: 04/16/2012 18:55
Date Prepared: 04/16/2012
Date Analyzed: 04/23/2012
Analyst: JG

Analyte	Result	PQL	Analyte	Result	PQL
Acetone	BQL	0.100	1,3-Dichloropropane	BQL	0.005
Acrolein	BQL	0.050	2,2-Dichloropropane	BQL	0.005
Acrylonitrile	BQL	0.050	1,1-Dichloropropene	BQL	0.005
Benzene	BQL	0.005	cis-1,3-Dichloropropene	BQL	0.005
Bromobenzene	BQL	0.005	trans-1,3-Dichloropropene	BQL	0.005
Bromochloromethane	BQL	0.005	Ethylbenzene	BQL	0.005
odichloromethane	BQL	0.005	Hexachlorobutadiene	BQL	0.005
noform	BQL	0.005	2-Hexanone	BQL	0.050
Bromomethane	BQL	0.010	Isopropylbenzene	BQL	0.005
2-Butanone	BQL	0.100	p-Isopropyltoluene	BQL	0.005
n-Butylbenzene	BQL	0.005	4-Methyl-2-pentanone	BQL	0.050
sec-Butylbenzene	BQL	0.005	Methylene chloride	BQL	0.005
tert-Butylbenzene	BQL	0.005	Naphthalene	BQL	0.005
Carbon disulfide	BQL	0.005	n-Propylbenzene	BQL	0.005
Carbon tetrachloride	BQL	0.005	Styrene	BQL	0.005
Chlorobenzene	BQL	0.005	1,1,1,2-Tetrachloroethane	BQL	0.005
Chloroethane	BQL	0.010	1,1,2,2-Tetrachloroethane	BQL	0.005
2-Chloroethylvinyl ether	BQL	0.010	Tetrachloroethene	BQL	0.005
Chloroform	BQL	0.005	Toluene	BQL	0.005
Chloromethane	BQL	0.010	1,2,3-Trichlorobenzene	BQL	0.005
2-Chlorotoluene	BQL	0.005	1,2,4-Trichlorobenzene	BQL	0.005
4-Chlorotoluene	BQL	0.005	1,1,1-Trichloroethane	BQL	0.005
1,2-Dibromo-3-chloropropane	BQL	0.005	1,1,2-Trichloroethane	BQL	0.005
Dibromochloromethane	BQL	0.005	Trichloroethene	BQL	0.005
1,2-Dibromoethane	BQL	0.005	Trichlorofluoromethane	BQL	0.005
Dibromomethane	BQL	0.005	1,2,3-Trichloropropane	BQL	0.005
1,2-Dichlorobenzene	BQL	0.005	1,2,4-Trimethylbenzene	BQL	0.005
1,3-Dichlorobenzene	BQL	0.005	1,3,5-Trimethylbenzene	BQL	0.005
1,4-Dichlorobenzene	BQL	0.005	Vinyl acetate	BQL	0.050
Dichlorodifluoromethane	BQL	0.010	Vinyl chloride	BQL	0.010
ichloroethane	BQL	0.005	m,p-Xylene	BQL	0.010
chloroethane	BQL	0.005	o-Xylene	BQL	0.005
1,1-Dichloroethene	BQL	0.005			
cis-1,2-Dichloroethene	BQL	0.005			
trans-1,2-Dichloroethene	BQL	0.005			
1,2-Dichloropropane	BQL	0.005			

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Sample Log-in Checklist

Client Name: Atlanta Environmental Consultants

ACL Project Number: **63407**

Cooler Check

	Yes	No
Ice Present?	☑	☐
Temperature	4 °C	

	Yes	No
Evidence Tape Present?	☐	☑
Evidence Tape Intact?	☐	☑

For coolers with a temperature greater than 6°C or with a damaged evidence seal, the bottles affected are identified below.

	Yes	No
Chain-of-Custody Form Included?	☑	☐
Field Sampling Sheet Included?	☐	☑

Cooler Shipping and Receipt

Shipping Method: Delivered by Customer

Tracking Number:

Receipt Date: 4/17/2012

Receipt Time: 10:45 AM

Bottle Check

Acid Preserved Sample (pH Check): pH<2? Yes
(pH for VO vials to be checked upon analysis)

Base Preserved Samples (pH Check): pH>12? N/A

Chlorine Check (Positive, Negative, N/A): N/A

Condition of Containers:

	Yes	No
Evidence Tape Present on Bottles?	☐	☑
Evidence Tape Intact?	☐	☑
Loose Caps?	☐	☑
Broken Bottles?	☐	☑

Cooler Unpacked/Checked By: JA **Logged In By:** JA **Log-in Date:** 4/17/2012

Comments (if any):

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CHAIN-OF-CUSTODY RECORD

Company Name: ATLANTA ENVIRONMENTAL CONSULTANTS	Phone #: 678-738-7004 Fax #: 678-562-2419
Address: 3400 BLUE SPRINGS RD STE 503 KENNESAW, GA 30144	Site Location: ROSWELL CLEANERS ROSWELL GA
Project Manager: PETER T. KALLAY	Project #: REB-2409 Project Name: R C ROSWELL #35825
I attest that the proper field sampling procedures were used during the collection of these samples.	Sampler Name (Print): PETER T. KALLAY

ANALYSIS REQUEST

Field Sample ID	# of Containers	Matrix: Water	Soil	Air	Sludge	Product	Other	Method Preserved: HCl	$NaHSO_4$	H_2SO_4	HNO_3	NaOH	None	Sampling: Date	Time	Grab	Comp	VOC 8260	Remarks
MW-5 DRUM	4		✓				✓		✓					4-16-12	6:55		✓	✓	

Special Detection Limits

Remarks:

TAT: Next Bus. Day ☐ 2nd Bus. Day ☐ 3rd Bus. Day ☐ Normal ☑

Special Handling: ACL Contract ____ Quote # ____ P.O. ____

Special Reporting Requirements: GEORGIA EPD Fax ☑

Lab Use Only: ACL Project #: 603407

Cooler Temp.: 4 °C

QA/QC Level: Level 1 ☐ Level 2 ☐ Other ☐ ____

CUSTODY RECORD

	Date	Time	
Relinquished by Sampler:	04/17/12	10:45	Received by:
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date: 4/17/12	Time: 10:45AM	Received by laboratory: Steve Watson

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Laboratory Report

ACL Project #: 63408

Client Proj #: REB-2409 / Roswell Cleaners

Prepared For:

Atlanta Environmental Consultants
3440 Blue Springs Rd.
Suite 503
Kennesaw, GA 30144-0000

Attention: Mr. Peter Kallay

Report Date: 04/27/2012

This report contains 5 pages.
(including this cover page and chain of custody)

John Andros
Technical Director

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BQL	Below Quantitation Limit	BDL	Below Method Detection Limit
MPN	Most Probable Number	TNTC	Too Numerous To Count
NTU	Nephelometric Turbidity Units	BTU	British Thermal Units
°C	Degrees Centigrade	°F	Degrees Fahrenheit
µmhos/cm	micromhos/cm	cfu	Colony Forming Unit
DF	Dilution Factor	meq	milliequivalents
kg	kilogram(s)	g	gram(s)
mg	milligram(s)	µg	microgram(s)
l or L	liter(s)	ml or mL	milliliter(s)
µl or µL	microliter(s)	m^3	cubic meter(s)
lb	pound(s)	ft^3	cubic foot(feet)
ft	foot(feet)	su	Standard Units
<	Less than	>	Greater than

mg/L, mg/kg — Units of concentration in milligrams per liter for liquids and milligrams per kilogram for solids. Also referred to as parts per million or "ppm" when the assumption is made that the specific gravity or density is one (1 g/mL).

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Surrogate — Compound(s) added by the laboratory for quality control monitoring.

mg/kg,dw — Units of concentration in milligrams per kilogram (dry weight basis).

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H	Estimated value - sample was analyzed beyond the accepted holding time
J	Estimated value - analyte was detected < PQL and ≥ MDL
L	The batch-specific LCS and/or LCSD was not within lab control limits for this analyte
M	The batch-specific MS and/or MSD was not within lab control limits for this analyte
R	The RPD between batch-specific sample/dup or MS/MSD was not within lab control limits for this analyte
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3440 Blue Springs Rd.
Suite 503
Kennesaw, GA 30144-0000

Contact: Mr. Peter Kallay

Client Proj #: REB-2409 / Roswell Cleaners
ACL Project #: 63408
Date Received: 04/17/2012
Date Reported: 04/27/2012

Volatile Organics (5035/8260B)

Sample ID: MW-5 20'
ACL Sample #: 293172
Units: mg/kg

Matrix: Soil
Date Sampled: 04/16/2012 18:15
Date Prepared: 04/16/2012
Date Analyzed: 04/23/2012
Analyst: JG

Analyte	Result	PQL	Analyte	Result	PQL
Acetone	BQL	0.100	1,3-Dichloropropane	BQL	0.005
Acrolein	BQL	0.050	2,2-Dichloropropane	BQL	0.005
Acrylonitrile	BQL	0.050	1,1-Dichloropropene	BQL	0.005
Benzene	BQL	0.005	cis-1,3-Dichloropropene	BQL	0.005
Bromobenzene	BQL	0.005	trans-1,3-Dichloropropene	BQL	0.005
Bromochloromethane	BQL	0.005	Ethylbenzene	BQL	0.005
Bromodichloromethane	BQL	0.005	Hexachlorobutadiene	BQL	0.005
Bromoform	BQL	0.005	2-Hexanone	BQL	0.050
Bromomethane	BQL	0.010	Isopropylbenzene	BQL	0.005
2-Butanone	BQL	0.100	p-Isopropyltoluene	BQL	0.005
n-Butylbenzene	BQL	0.005	4-Methyl-2-pentanone	BQL	0.050
sec-Butylbenzene	BQL	0.005	Methylene chloride	BQL	0.005
tert-Butylbenzene	BQL	0.005	Naphthalene	BQL	0.005
Carbon disulfide	BQL	0.005	n-Propylbenzene	BQL	0.005
Carbon tetrachloride	BQL	0.005	Styrene	BQL	0.005
Chlorobenzene	BQL	0.005	1,1,1,2-Tetrachloroethane	BQL	0.005
Chloroethane	BQL	0.010	1,1,2,2-Tetrachloroethane	BQL	0.005
2-Chloroethylvinyl ether	BQL	0.010	Tetrachloroethene	BQL	0.005
Chloroform	BQL	0.005	Toluene	BQL	0.005
Chloromethane	BQL	0.010	1,2,3-Trichlorobenzene	BQL	0.005
2-Chlorotoluene	BQL	0.005	1,2,4-Trichlorobenzene	BQL	0.005
4-Chlorotoluene	BQL	0.005	1,1,1-Trichloroethane	BQL	0.005
1,2-Dibromo-3-chloropropane	BQL	0.005	1,1,2-Trichloroethane	BQL	0.005
Dibromochloromethane	BQL	0.005	Trichloroethene	BQL	0.005
1,2-Dibromoethane	BQL	0.005	Trichlorofluoromethane	BQL	0.005
Dibromomethane	BQL	0.005	1,2,3-Trichloropropane	BQL	0.005
1,2-Dichlorobenzene	BQL	0.005	1,2,4-Trimethylbenzene	BQL	0.005
1,3-Dichlorobenzene	BQL	0.005	1,3,5-Trimethylbenzene	BQL	0.005
1,4-Dichlorobenzene	BQL	0.005	Vinyl acetate	BQL	0.050
Dichlorodifluoromethane	BQL	0.010	Vinyl chloride	BQL	0.010
1,1-Dichloroethane	BQL	0.005	m,p-Xylene	BQL	0.010
1,2-Dichloroethane	BQL	0.005	o-Xylene	BQL	0.005
1,1-Dichloroethene	BQL	0.005			
cis-1,2-Dichloroethene	BQL	0.005			
trans-1,2-Dichloroethene	BQL	0.005			
1,2-Dichloropropane	BQL	0.005			

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Sample Log-in Checklist

Client Name: Atlanta Environmental Consultants

ACL Project Number: **63408**

Cooler Check

	Yes	No
Ice Present?	☑	☐
Temperature	4 °C	

	Yes	No
Evidence Tape Present?	☐	☑
Evidence Tape Intact?	☐	☑

For coolers with a temperature greater than 6°C or with a damaged evidence seal, the bottles affected are identified below.

	Yes	No
Chain-of-Custody Form Included?	☑	☐
Field Sampling Sheet Included?	☐	☑

Cooler Shipping and Receipt

Shipping Method: Delivered by Customer

Tracking Number:

Receipt Date: 4/17/2012

Receipt Time: 10:45 AM

Bottle Check

Acid Preserved Sample (pH Check): pH<2? Yes
(pH for VO vials to be checked upon analysis)

Base Preserved Samples (pH Check): pH>12? N/A

Chlorine Check (Positive, Negative, N/A): N/A

Condition of Containers:

	Yes	No
Evidence Tape Present on Bottles?	☐	☑
Evidence Tape Intact?	☐	☑
Loose Caps?	☐	☑
Broken Bottles?	☐	☑

Cooler Unpacked/Checked By: JA **Logged In By:** JA **Log-in Date:** 4/17/2012

Comments (if any):

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CHAIN-OF-CUSTODY RECORD

Company Name: ATLANTA ENVIRONMENTAL CONSULTANTS
Phone #: 678-738-7004
Fax #: 678-569-2619
Address: 3440 BLUE SPRINGS RD. STE 503 KENNESAW, GA 30144
Site Location: ROSWELL CLEANERS ROSWELL, GA
Project Manager: PETER KALLAY
Project #: REB-2609
Project Name: RC ANN'L ASSESS
Sampler Name (Print): PETER T. KALLAY
I attest that the proper field sampling procedures were used during the collection of these samples.

ANALYSIS REQUEST

Field Sample ID	# of Containers	Matrix: Water	Soil	Air	Sludge	Product	Other	Method Preserved: HCl	$NaHSO_4$	H_2SO_4	HNO_3	NaOH	None	Sampling: Date	Time	Grab	Comp	VOC 8260												Remarks
MW-5 20'	4		✓				✓	✓						4-16-12	6:15	✓		✓												

Special Detection Limits

Remarks:

TAT: Next Bus. Day ☐ 2nd Bus. Day ☐ 3rd Bus. Day ☐ Normal ☑

Special Handling: ACL Contract _____ Quote # _____ P.O. _____

QA/QC Level: Level 1 ☐ Level 2 ☐ Other ☐ _____

Special Reporting Requirements: GEORGIA EPD
Fax ☑

Lab Use Only: ACL Project #: 63408

Cooler Temp: 4 °C

CUSTODY RECORD

	Date	Time	
Relinquished by Sampler:	04/17/12	10:45	Received by:
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date: 4/17/12	Time: 1054AM	Received by Laboratory: Steve Coats

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Laboratory Report

ACL Project #: 63423

Client Proj #: REB-2409 / Roswell Cleaners

Prepared For:

Atlanta Environmental Consultants
3440 Blue Springs Rd.
Suite 503
Kennesaw, GA 30144-0000

Attention: Mr. Peter Kallay

Report Date: 04/27/2012

This report contains 9 pages.
(including this cover page and chain of custody)

John Andros
Technical Director

ACCREDITED IN ACCORDANCE WITH nelac

Advanced Chemistry Labs is a woman-owned, small business concern.

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Explanation of Symbols and Abbreviations

Listed below are common symbols and abbreviations typically used in reporting technical data:

PQL	Practical Quantitation Limit	MDL	Method Detection Limit
BQL	Below Quantitation Limit	BDL	Below Method Detection Limit
MPN	Most Probable Number	TNTC	Too Numerous To Count
NTU	Nephelometric Turbidity Units	BTU	British Thermal Units
°C	Degrees Centigrade	°F	Degrees Fahrenheit
µmhos/cm	micromhos/cm	cfu	Colony Forming Unit
DF	Dilution Factor	meq	milliequivalents
kg	kilogram(s)	g	gram(s)
mg	milligram(s)	µg	microgram(s)
l or L	liter(s)	ml or mL	milliliter(s)
µl or µL	microliter(s)	m^3	cubic meter(s)
lb	pound(s)	ft^3	cubic foot(feet)
ft	foot(feet)	su	Standard Units
<	Less than	>	Greater than

mg/L, mg/kg — Units of concentration in milligrams per liter for liquids and milligrams per kilogram for solids. Also referred to as parts per million or "ppm" when the assumption is made that the specific gravity or density is one (1 g/mL).

µg/L, µg/kg — Units of concentration in micrograms per liter for liquids and micrograms per kilogram for solids. Also referred to as parts per billion or "ppb" when the assumption is made that the specific gravity or density is one (1 g/mL).

wt % — Units of concentration expressed on a weight/weight basis (e.g. grams per 100 grams).

Surrogate — Compound(s) added by the laboratory for quality control monitoring.

mg/kg,dw — Units of concentration in milligrams per kilogram (dry weight basis).

Data Qualifiers:

B	Analyte was also detected in the method blank
E	Estimated value - analyte was detected at concentration greater than upper calibration limit
F	Estimated value - analyte should have been tested as a field parameter
H	Estimated value - sample was analyzed beyond the accepted holding time
J	Estimated value - analyte was detected < PQL and ≥ MDL
L	The batch-specific LCS and/or LCSD was not within lab control limits for this analyte
M	The batch-specific MS and/or MSD was not within lab control limits for this analyte
R	The RPD between batch-specific sample/dup or MS/MSD was not within lab control limits for this analyte
S	The surrogate recovery was not within quality control limits
Z	Laboratory specific qualifier – refer to case narrative
*	Performed in strict accordance with the procedures and controls of the ACL quality system, but not currently in the NELAC list of certified analytes/methods

Solid samples (i.e. soil, sludge, solid waste) are reported on a wet weight basis unless otherwise noted. Estimated uncertainty values are available upon request.

Representation and Limitation of Liability – The accuracy of all analytical results for samples begins as it is received by the laboratory. The integrity of the sample begins at the time it is placed in the possession of authorized ACL personnel. All other warranties, expressed or implied, are disclaimed. Liability is limited to the cost of the analysis.

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Client: Atlanta Environmental Consultants
3440 Blue Springs Rd.
Suite 503
Kennesaw, GA 30144-0000

Contact: Mr. Peter Kallay

Client Proj #: REB-2409 / Roswell Cleaners
ACL Project #: 63423
Date Received: 04/19/2012
Date Reported: 04/27/2012

Volatile Organics (8260B)

Sample ID: MW-1
ACL Sample #: 293207
Units: µg/L

Matrix: Water
Date Sampled: 04/18/2012 15:10
Date Prepared:
Date Analyzed: 04/23/2012
Analyst: JG

Analyte	Result	PQL	Analyte	Result	PQL
Acetone	BQL	100	1,3-Dichloropropane	BQL	5.0
Acrolein	BQL	50	2,2-Dichloropropane	BQL	5.0
Acrylonitrile	BQL	50	1,1-Dichloropropene	BQL	5.0
Benzene	BQL	5.0	cis-1,3-Dichloropropene	BQL	5.0
Bromobenzene	BQL	5.0	trans-1,3-Dichloropropene	BQL	5.0
Bromochloromethane	BQL	5.0	Ethylbenzene	BQL	5.0
Bromodichloromethane	BQL	5.0	Hexachlorobutadiene	BQL	5.0
Bromoform	BQL	5.0	2-Hexanone	BQL	50
Bromomethane	BQL	10	Isopropylbenzene	BQL	5.0
2-Butanone	BQL	100	p-Isopropyltoluene	BQL	5.0
n-Butylbenzene	BQL	5.0	4-Methyl-2-pentanone	BQL	50
sec-Butylbenzene	BQL	5.0	Methylene chloride	BQL	5.0
tert-Butylbenzene	BQL	5.0	Naphthalene	BQL	5.0
Carbon disulfide	BQL	5.0	n-Propylbenzene	BQL	5.0
Carbon tetrachloride	BQL	5.0	Styrene	BQL	5.0
Chlorobenzene	BQL	5.0	1,1,1,2-Tetrachloroethane	BQL	5.0
Chloroethane	BQL	10	1,1,2,2-Tetrachloroethane	BQL	5.0
2-Chloroethylvinyl ether	BQL	10	Tetrachloroethene	BQL	5.0
Chloroform	BQL	5.0	Toluene	BQL	5.0
Chloromethane	BQL	10	1,2,3-Trichlorobenzene	BQL	5.0
2-Chlorotoluene	BQL	5.0	1,2,4-Trichlorobenzene	BQL	5.0
4-Chlorotoluene	BQL	5.0	1,1,1-Trichloroethane	BQL	5.0
1,2-Dibromo-3-chloropropane	BQL	5.0	1,1,2-Trichloroethane	BQL	5.0
Dibromochloromethane	BQL	5.0	Trichloroethene	BQL	5.0
1,2-Dibromoethane	BQL	5.0	Trichlorofluoromethane	BQL	5.0
Dibromomethane	BQL	5.0	1,2,3-Trichloropropane	BQL	5.0
1,2-Dichlorobenzene	BQL	5.0	1,2,4-Trimethylbenzene	BQL	5.0
1,3-Dichlorobenzene	BQL	5.0	1,3,5-Trimethylbenzene	BQL	5.0
1,4-Dichlorobenzene	BQL	5.0	Vinyl acetate	BQL	50
Dichlorodifluoromethane	BQL	10	Vinyl chloride	BQL	2.0
1,1-Dichloroethane	BQL	5.0	m,p-Xylene	BQL	10
1,2-Dichloroethane	BQL	5.0	o-Xylene	BQL	5.0
1,1-Dichloroethene	BQL	5.0			
cis-1,2-Dichloroethene	BQL	5.0			
trans-1,2-Dichloroethene	BQL	5.0			
1,2-Dichloropropane	BQL	5.0			

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Contact: Mr. Peter Kallay

Client Proj #: REB-2409 / Roswell Cleaners
ACL Project #: 63423
Date Received: 04/19/2012
Date Reported: 04/27/2012

Volatile Organics (8260B)

Sample ID: MW-5
ACL Sample #: 293208
Units: µg/L

Matrix: Water
Date Sampled: 04/18/2012 15:30
Date Prepared:
Date Analyzed: 04/23/2012
Analyst: JG

Analyte	Result	PQL	Analyte	Result	PQL
Acetone	BQL	100	1,3-Dichloropropane	BQL	5.0
Acrolein	BQL	50	2,2-Dichloropropane	BQL	5.0
Acrylonitrile	BQL	50	1,1-Dichloropropene	BQL	5.0
Benzene	BQL	5.0	cis-1,3-Dichloropropene	BQL	5.0
Bromobenzene	BQL	5.0	trans-1,3-Dichloropropene	BQL	5.0
Bromochloromethane	BQL	5.0	Ethylbenzene	BQL	5.0
Bromodichloromethane	BQL	5.0	Hexachlorobutadiene	BQL	5.0
Bromoform	BQL	5.0	2-Hexanone	BQL	50
Bromomethane	BQL	10	Isopropylbenzene	BQL	5.0
2-Butanone	BQL	100	p-Isopropyltoluene	BQL	5.0
n-Butylbenzene	BQL	5.0	4-Methyl-2-pentanone	BQL	50
sec-Butylbenzene	BQL	5.0	Methylene chloride	BQL	5.0
tert-Butylbenzene	BQL	5.0	Naphthalene	BQL	5.0
Carbon disulfide	BQL	5.0	n-Propylbenzene	BQL	5.0
Carbon tetrachloride	BQL	5.0	Styrene	BQL	5.0
Chlorobenzene	BQL	5.0	1,1,1,2-Tetrachloroethane	BQL	5.0
Chloroethane	BQL	10	1,1,2,2-Tetrachloroethane	BQL	5.0
2-Chloroethylvinyl ether	BQL	10	Tetrachloroethene	BQL	5.0
Chloroform	BQL	5.0	Toluene	BQL	5.0
Chloromethane	BQL	10	1,2,3-Trichlorobenzene	BQL	5.0
2-Chlorotoluene	BQL	5.0	1,2,4-Trichlorobenzene	BQL	5.0
4-Chlorotoluene	BQL	5.0	1,1,1-Trichloroethane	BQL	5.0
1,2-Dibromo-3-chloropropane	BQL	5.0	1,1,2-Trichloroethane	BQL	5.0
Dibromochloromethane	BQL	5.0	Trichloroethene	BQL	5.0
1,2-Dibromoethane	BQL	5.0	Trichlorofluoromethane	BQL	5.0
Dibromomethane	BQL	5.0	1,2,3-Trichloropropane	BQL	5.0
1,2-Dichlorobenzene	BQL	5.0	1,2,4-Trimethylbenzene	BQL	5.0
1,3-Dichlorobenzene	BQL	5.0	1,3,5-Trimethylbenzene	BQL	5.0
1,4-Dichlorobenzene	BQL	5.0	Vinyl acetate	BQL	50
Dichlorodifluoromethane	BQL	10	Vinyl chloride	BQL	2.0
1,1-Dichloroethane	BQL	5.0	m,p-Xylene	BQL	10
1,2-Dichloroethane	BQL	5.0	o-Xylene	BQL	5.0
1,1-Dichloroethene	BQL	5.0			
cis-1,2-Dichloroethene	BQL	5.0			
trans-1,2-Dichloroethene	BQL	5.0			
1,2-Dichloropropane	BQL	5.0			

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Kennesaw, GA 30144-0000

Contact: Mr. Peter Kallay

Client Proj #: REB-2409 / Roswell Cleaners
ACL Project #: 63423
Date Received: 04/19/2012
Date Reported: 04/27/2012

Volatile Organics (8260B)

Sample ID: MW-2
ACL Sample #: 293209
Units: µg/L

Matrix: Water
Date Sampled: 04/18/2012 16:05
Date Prepared:
Date Analyzed: 04/23/2012
Analyst: JG

Analyte	Result	PQL	Analyte	Result	PQL
Acetone	BQL	100	1,3-Dichloropropane	BQL	5.0
Acrolein	BQL	50	2,2-Dichloropropane	BQL	5.0
Acrylonitrile	BQL	50	1,1-Dichloropropene	BQL	5.0
Benzene	BQL	5.0	cis-1,3-Dichloropropene	BQL	5.0
Bromobenzene	BQL	5.0	trans-1,3-Dichloropropene	BQL	5.0
Bromochloromethane	BQL	5.0	Ethylbenzene	BQL	5.0
Bromodichloromethane	BQL	5.0	Hexachlorobutadiene	BQL	5.0
Bromoform	BQL	5.0	2-Hexanone	BQL	50
Bromomethane	BQL	10	Isopropylbenzene	BQL	5.0
2-Butanone	BQL	100	p-Isopropyltoluene	BQL	5.0
n-Butylbenzene	BQL	5.0	4-Methyl-2-pentanone	BQL	50
sec-Butylbenzene	BQL	5.0	Methylene chloride	BQL	5.0
tert-Butylbenzene	BQL	5.0	Naphthalene	BQL	5.0
Carbon disulfide	BQL	5.0	n-Propylbenzene	BQL	5.0
Carbon tetrachloride	BQL	5.0	Styrene	BQL	5.0
Chlorobenzene	BQL	5.0	1,1,1,2-Tetrachloroethane	BQL	5.0
Chloroethane	BQL	10	1,1,2,2-Tetrachloroethane	BQL	5.0
2-Chloroethylvinyl ether	BQL	10	Tetrachloroethene	5.5	5.0
Chloroform	BQL	5.0	Toluene	BQL	5.0
Chloromethane	BQL	10	1,2,3-Trichlorobenzene	BQL	5.0
2-Chlorotoluene	BQL	5.0	1,2,4-Trichlorobenzene	BQL	5.0
4-Chlorotoluene	BQL	5.0	1,1,1-Trichloroethane	BQL	5.0
1,2-Dibromo-3-chloropropane	BQL	5.0	1,1,2-Trichloroethane	BQL	5.0
Dibromochloromethane	BQL	5.0	Trichloroethene	6.6	5.0
1,2-Dibromoethane	BQL	5.0	Trichlorofluoromethane	BQL	5.0
Dibromomethane	BQL	5.0	1,2,3-Trichloropropane	BQL	5.0
1,2-Dichlorobenzene	BQL	5.0	1,2,4-Trimethylbenzene	BQL	5.0
1,3-Dichlorobenzene	BQL	5.0	1,3,5-Trimethylbenzene	BQL	5.0
1,4-Dichlorobenzene	BQL	5.0	Vinyl acetate	BQL	50
Dichlorodifluoromethane	BQL	10	Vinyl chloride	3.6	2.0
1,1-Dichloroethane	BQL	5.0	m,p-Xylene	BQL	10
1,2-Dichloroethane	BQL	5.0	o-Xylene	BQL	5.0
1,1-Dichloroethene	BQL	5.0			
cis-1,2-Dichloroethene	55	5.0			
trans-1,2-Dichloroethene	BQL	5.0			
1,2-Dichloropropane	BQL	5.0			

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Contact: Mr. Peter Kallay

Client Proj #: REB-2409 / Roswell Cleaners
ACL Project #: 63423
Date Received: 04/19/2012
Date Reported: 04/27/2012

Volatile Organics (8260B)

Sample ID: MW-3
ACL Sample #: 293210
Units: µg/L

Matrix: Water
Date Sampled: 04/18/2012 16:55
Date Prepared:
Date Analyzed: 04/23/2012
Analyst: JG

Analyte	Result	PQL	Analyte	Result	PQL
Acetone	BQL	100	1,3-Dichloropropane	BQL	5.0
Acrolein	BQL	50	2,2-Dichloropropane	BQL	5.0
Acrylonitrile	BQL	50	1,1-Dichloropropene	BQL	5.0
Benzene	BQL	5.0	cis-1,3-Dichloropropene	BQL	5.0
Bromobenzene	BQL	5.0	trans-1,3-Dichloropropene	BQL	5.0
Bromochloromethane	BQL	5.0	Ethylbenzene	BQL	5.0
Bromodichloromethane	BQL	5.0	Hexachlorobutadiene	BQL	5.0
Bromoform	BQL	5.0	2-Hexanone	BQL	50
Bromomethane	BQL	10	Isopropylbenzene	BQL	5.0
2-Butanone	BQL	100	p-Isopropyltoluene	BQL	5.0
n-Butylbenzene	BQL	5.0	4-Methyl-2-pentanone	BQL	50
sec-Butylbenzene	BQL	5.0	Methylene chloride	BQL	5.0
tert-Butylbenzene	BQL	5.0	Naphthalene	BQL	5.0
Carbon disulfide	BQL	5.0	n-Propylbenzene	BQL	5.0
Carbon tetrachloride	BQL	5.0	Styrene	BQL	5.0
Chlorobenzene	BQL	5.0	1,1,1,2-Tetrachloroethane	BQL	5.0
Chloroethane	BQL	10	1,1,2,2-Tetrachloroethane	BQL	5.0
2-Chloroethylvinyl ether	BQL	10	Tetrachloroethene	16	5.0
Chloroform	BQL	5.0	Toluene	BQL	5.0
Chloromethane	BQL	10	1,2,3-Trichlorobenzene	BQL	5.0
2-Chlorotoluene	BQL	5.0	1,2,4-Trichlorobenzene	BQL	5.0
4-Chlorotoluene	BQL	5.0	1,1,1-Trichloroethane	BQL	5.0
1,2-Dibromo-3-chloropropane	BQL	5.0	1,1,2-Trichloroethane	BQL	5.0
Dibromochloromethane	BQL	5.0	Trichloroethene	8.4	5.0
1,2-Dibromoethane	BQL	5.0	Trichlorofluoromethane	BQL	5.0
Dibromomethane	BQL	5.0	1,2,3-Trichloropropane	BQL	5.0
1,2-Dichlorobenzene	BQL	5.0	1,2,4-Trimethylbenzene	BQL	5.0
1,3-Dichlorobenzene	BQL	5.0	1,3,5-Trimethylbenzene	BQL	5.0
1,4-Dichlorobenzene	BQL	5.0	Vinyl acetate	BQL	50
Dichlorodifluoromethane	BQL	10	Vinyl chloride	BQL	2.0
1,1-Dichloroethane	BQL	5.0	m,p-Xylene	BQL	10
1,2-Dichloroethane	BQL	5.0	o-Xylene	BQL	5.0
1,1-Dichloroethene	BQL	5.0			
cis-1,2-Dichloroethene	7.7	5.0			
trans-1,2-Dichloroethene	BQL	5.0			
1,2-Dichloropropane	BQL	5.0			

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Contact: Mr. Peter Kallay

Client Proj #: REB-2409 / Roswell Cleaners
ACL Project #: 63423
Date Received: 04/19/2012
Date Reported: 04/27/2012

Volatile Organics (8260B)

Sample ID: MW-4
ACL Sample #: 293211
Units: µg/L

Matrix: Water
Date Sampled: 04/18/2012 17:30
Date Prepared:
Date Analyzed: 04/23/2012
Analyst: JG

Analyte	Result	PQL	Analyte	Result	PQL
Acetone	BQL	100	1,3-Dichloropropane	BQL	5.0
Acrolein	BQL	50	2,2-Dichloropropane	BQL	5.0
Acrylonitrile	BQL	50	1,1-Dichloropropene	BQL	5.0
Benzene	BQL	5.0	cis-1,3-Dichloropropene	BQL	5.0
Bromobenzene	BQL	5.0	trans-1,3-Dichloropropene	BQL	5.0
Bromochloromethane	BQL	5.0	Ethylbenzene	BQL	5.0
Bromodichloromethane	BQL	5.0	Hexachlorobutadiene	BQL	5.0
Bromoform	BQL	5.0	2-Hexanone	BQL	50
Bromomethane	BQL	10	Isopropylbenzene	BQL	5.0
2-Butanone	BQL	100	p-Isopropyltoluene	BQL	5.0
n-Butylbenzene	BQL	5.0	4-Methyl-2-pentanone	BQL	50
sec-Butylbenzene	BQL	5.0	Methylene chloride	BQL	5.0
tert-Butylbenzene	BQL	5.0	Naphthalene	BQL	5.0
Carbon disulfide	BQL	5.0	n-Propylbenzene	BQL	5.0
Carbon tetrachloride	BQL	5.0	Styrene	BQL	5.0
Chlorobenzene	BQL	5.0	1,1,1,2-Tetrachloroethane	BQL	5.0
Chloroethane	BQL	10	1,1,2,2-Tetrachloroethane	BQL	5.0
2-Chloroethylvinyl ether	BQL	10	Tetrachloroethene	66	5.0
Chloroform	BQL	5.0	Toluene	BQL	5.0
Chloromethane	BQL	10	1,2,3-Trichlorobenzene	BQL	5.0
2-Chlorotoluene	BQL	5.0	1,2,4-Trichlorobenzene	BQL	5.0
4-Chlorotoluene	BQL	5.0	1,1,1-Trichloroethane	BQL	5.0
1,2-Dibromo-3-chloropropane	BQL	5.0	1,1,2-Trichloroethane	BQL	5.0
Dibromochloromethane	BQL	5.0	Trichloroethene	37	5.0
1,2-Dibromoethane	BQL	5.0	Trichlorofluoromethane	BQL	5.0
Dibromomethane	BQL	5.0	1,2,3-Trichloropropane	BQL	5.0
1,2-Dichlorobenzene	BQL	5.0	1,2,4-Trimethylbenzene	BQL	5.0
1,3-Dichlorobenzene	BQL	5.0	1,3,5-Trimethylbenzene	BQL	5.0
1,4-Dichlorobenzene	BQL	5.0	Vinyl acetate	BQL	50
Dichlorodifluoromethane	BQL	10	Vinyl chloride	BQL	2.0
1,1-Dichloroethane	BQL	5.0	m,p-Xylene	BQL	10
1,2-Dichloroethane	BQL	5.0	o-Xylene	BQL	5.0
1,1-Dichloroethene	BQL	5.0			
cis-1,2-Dichloroethene	56	5.0			
trans-1,2-Dichloroethene	3.1	5.0			
1,2-Dichloropropane	BQL	5.0			

ACL

ADVANCED CHEMISTRY LABS, INC.

Phone: (770) 409-1444
Fax: (770) 409-1844
e-mail: acl@acl-labs.net

3039 Amwiler Road • Suite 100 • Atlanta, GA 30360
P.O. Box 88610 • Atlanta, GA 30356
www.advancedchemistrylabs.com

Sample Log-in Checklist

Client Name: Atlanta Environmental Consultants ACL Project Number: **63423**

Cooler Check

	Yes	No		Yes	No
Ice Present?	☑	☐	Evidence Tape Present?	☐	☑
Temperature	3 °C		Evidence Tape Intact?	☐	☑

For coolers with a temperature greater than 6°C or with a damaged evidence seal, the bottles affected are identified below.

	Yes	No
Chain-of-Custody Form Included?	☑	☐
Field Sampling Sheet Included?	☐	☑

Cooler Shipping and Receipt

Shipping Method: Delivered by Customer **Tracking Number:**

Receipt Date: 4/19/2012 **Receipt Time:** 2:19 PM

Bottle Check

Acid Preserved Sample (pH Check): pH<2? Yes
(pH for VO vials to be checked upon analysis)

Base Preserved Samples (pH Check): pH>12? N/A

Chlorine Check (Positive, Negative, N/A): N/A

Condition of Containers:

	Yes	No
Evidence Tape Present on Bottles?	☐	☑
Evidence Tape Intact?	☐	☑
Loose Caps?	☐	☑
Broken Bottles?	☐	☑

Cooler Unpacked/Checked By: JA **Logged In By:** JA **Log-in Date:** 4/19/2012

Comments (if any):

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CHAIN-OF-CUSTODY RECORD

Company Name: ATLANTA ENVIRONMENTAL CONSULTANTS	Phone #: 678-738-7004 Fax #: 678-569-2419
Address: 3440 BLUE SPRINGS RD. STE 303 KENNESAW, GA 30144	Site Location: ROSWELL CLEANERS ROSWELL, GA
Project Manager: PETER T. KALLAY	Project #: AEB-2409 Project Name: RC ADD'L ASSESS.
I attest that the proper field sampling procedures were used during the collection of these samples.	Sampler Name (Print): PETER T. KALLAY

ANALYSIS REQUEST

Field Sample ID	# of Containers	Matrix: Water	Soil	Air	Sludge	Product	Other	Method Preserved: HCl	$NaHSO_4$	H_2SO_4	HNO_3	NaOH	None	Sampling: Date	Time	Grab	Comp	VOCs 8260	Remarks
MW-1	2	✓						✓						4-18-12	3:10	✓		✓	
MW-5	2	✓						✓						4-18-12	3:30	✓		✓	
MW-2	2	✓						✓						4-18-12	4:05	✓		✓	
MW-3	2	✓						✓						4-18-12	4:55	✓		✓	
MW-4	2	✓						✓						4-18-12	5:30	✓		✓	
~~MW-5~~ BK.																			

Special Detection Limits: GEORGIA EPD

Remarks:

Special Reporting Requirements: Fax ☐

Lab Use Only: ACL Project #: 63423

Cooler Temp.: 3 °C

TAT
Next Bus. Day ☐
2nd Bus. Day ☐
3rd Bus. Day ☐
Normal ☑

Special Handling
ACL Contract _____
Quote # _____
P.O. _____

QA/QC Level
Level 1 ☐ Level 2 ☐ Other ☐ _____

CUSTODY RECORD

Relinquished by Sampler:	Date: 04/19/2012	Time: 2:19	Received by:
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date: 4/19/12	Time: 2:19	Received by Laboratory: